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ABSTRACT

This document is the first of a two-part series designed to help teachers, schools, and districts to implement standards-based instruction. Part 1, The Foundation for Improvement, explains why standards-based instruction improves teaching and learning. Part 2, First Steps to a Standards-Based Classroom, describes how to adapt the curriculum to help students meet the standards. Part 3, Phasing in Standards-Based Instruction, discusses when to expect new developments in the standards-based system. Part 4, The 1997-98 Content Standards (which comprises the bulk of the publication), describes what students need to learn in the areas of English, mathematics, science, social studies, the arts, second languages, and careers. Part 5, Resources, offers a list of contacts for further information. The second half of the series will be a tool kit for teachers, with tested resources for assessing and adapting curriculum to better address the standards. The two parts together will offer a full overview of the standards-based instruction system and how to help students succeed within it. (SM)

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OREGON'S CONTENT STANDARDS 1997–1998

INTRODUCTORY PACKET

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This document is the first of a two-part series designed to help teachers, schools and districts to implement standards-based instruction.

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The second half of this series will be a tool kit for teachers, with tested resources for assessing and adapting your curriculum to better address the standards. Expect to receive that packet around mid-year. When you put the two together in a three-ring binder, you'll have a full overview of the standards-based instruction system, and how you can help your students succeed within it.

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The 1997-98 Content Standards Introductory Packet was produced by the Oregon Department of Education for distribution to Oregon public schools, school districts and education service districts.

Additional copies are available from Barbara Slimak, Oregon Department of Education, (503) 378-3310 ext. 485 (or e-mail barbara.slimak@state.or.us).

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Cover Photos

Salem photographers Suzanne Stauss and Kelly James took the photos of students at Western View Middle School in Corvallis, Siletz Elementary School in Siletz and Pacific High School in Port Orford.

THE FOUNDATION FOR IMPROVEMENT

Imagine starting your school year knowing exactly what your students need to learn. Imagine knowing just what skills they bring to your class, so you can focus your lesson plans on helping them build directly from those skills toward specific standards of achievement.

That's just one of the visions coming closer to realization as Oregon moves steadily toward a system of standards-based instruction. The momentum is building as the education community grows to understand the potential:

- the opportunity to provide students with coordinated instruction that builds on what they have learned in previous years
- grading that's consistent from one teacher to the next, across schools and districts
- smooth transitions when students move from school to school
- a better match between what's taught and what's tested
- student advancement based on mastery of academic subjects, instead of seat-time
- a system that allows students additional time and help when they need it
- clearer communication and accountability within teaching staffs
- a system of measuring student achievement that parents can understand and support
- a new perception of the teacher as coach, helping students toward high achievement in state standards
- a teaching work environment built on high, clearly defined expectations
- a culture that empowers teachers to maintain high standards

Much of the preliminary work of creating this visionary system is behind us. With extensive input from parents and teachers around the state, the State Board of Education has adopted **content standards**, identifying what students should know and be able to do in six major academic areas. **Benchmarks** have been set within each of the content standards, specifying what subjects will be covered in state tests at the end of grades 3, 5, 8, 10 and 12. Assessment teams are finalizing **performance standards** to measure student achievement of the benchmarks, based on the state tests and local assessments. **Scoring guides** are being distributed to help teachers conduct local assessments.

Now, the last and most critical phase is beginning. The success of Oregon's standards-based instruction system hinges on how the standards are implemented in districts and classrooms. It depends on a commitment from all teachers, with the support of their administrators, to embrace the vision, study the concepts and skills behind the content standards, and center everyday classroom activities on them. The ultimate goal is for every curriculum choice and lesson plan to be focused on helping students achieve the standards.

For teachers, meeting this goal will mean concentrating more than ever on what is expected of your students, and how classroom curriculum, instruction and assessment will work together to help students achieve results. This starts with understanding the content standards: those relevant to your subject area or grade level, and more generally, those that your students will be expected to meet. Once you understand the concepts and skills involved in each content standard, you can begin choosing teaching strategies that promote them, and assessment activities that allow students to clearly demonstrate they have mastered them.

District-level curriculum decisions will also pivot on the content standards. But it will be just as important for other district decisions—budget, staffing, facilities, professional development, etc.—to be approached from the same standpoint: "How will this impact our ability to prepare students to meet the standards?"

Adapting to standards-based instruction will demand a great deal of planning, professional development and meeting time. This document suggests some first steps in that process, and will be followed in a few months with more detailed, practical resource materials. More important than any technical assistance, though, is your endorsement of the vision: a state full of students who can demonstrate high-level skills. Your commitment will help build a more equitable, more accessible, and more effective education system.

FIRST STEPS TO A STANDARDS-BASED CLASSROOM

In a standards-based system, educators learn to look at instructional design in a new way. Instead of teaching to the subject, you teach to the student. Instead of assessing what you taught, you assess whether your students learned specific content and what they need to learn next.

For many teachers and curriculum developers, this change takes a real commitment. It may mean thoroughly rethinking the way you set your course for the year, the way you evaluate your progress and the frequency with which you redesign your classroom scope and sequence. But the process can be very exciting, bringing staff members together to make meaningful changes in the way subjects are taught, and giving every educator more confidence in meeting teaching's multiple demands.

The challenges of changing to standards-based instructional design must not be underestimated. To make room for new material, experienced teachers may have to cut portions of curricula they've been refining for years. New teachers may struggle to balance district curricular requirements with content standards as they build their scope and sequence. Existing structures for setting school and district curriculum priorities may have to change. School boards, site councils and administrators will have to make time and resources available for planning and staff development.

But those challenges should not be overwhelming. What follows is a simplified, how-to approach to standards-based instructional design. It can be launched at any time of the school year by an individual or group, a teacher or an administrator. If you run into problems, the Oregon Department of Education staff people listed in the back of this document are ready to help, or can refer you to others who have had similar experiences. The important thing is to get started. Your students will be tested on the basis of the content standards. They need you to prepare them to succeed.

Step 1: Studying the Standards

Before you can adopt a standards-based approach to instructional design, you must **thoroughly understand** the content standards for which your students will be responsible. There may be several concepts and skills embedded in one benchmark. A thorough understanding will require taking apart the standards and benchmarks, following the skills progression and exploring the interrelationships of subject matter within and between grades.

Step 2: Dividing Responsibilities among Your Co-Workers

Once you understand the standards, you can get together with other teachers to **compare and divide responsibilities** for teaching the concepts and skills in your shared benchmark areas. For example, both 4th and 5th grade teachers are responsible for preparing students to achieve the 5th grade benchmarks. All the 4th and 5th grade teachers in a school should work jointly to analyze the standards, and make sure that building blocks are in place in both grades to help students move from one concept or skill to the next. In the higher grades, teachers in different subject areas should examine the standards together to find areas where they can reinforce one another's lesson plans.

These benchmark cluster meetings will help you decide when concepts should be introduced, when they should be reinforced, and what kind of testing should occur to make sure each student can successfully demonstrate the knowledge and skills required in the standards. Looking at test results and student work from the previous grade or course can help you predict where students will need extra help.

Step 3: Aligning Your Scope and Sequence with the Content Standards

Knowing what benchmark skills you are responsible for teaching your students, you now can **check your existing scope and sequence** to make sure it includes and appropriately emphasizes all those skills. Scrutinize each of your lesson plans from the perspective of whether it helps bring students closer to achieving the standards. Focus more lesson time on standards-specific areas where you expect students to be weak. You should also check your instructional materials to make sure they support you in teaching standards-related skills.

Step 4 — Using Assessment to Readjust Your Program

Standards-based instructional design is one part of a larger **continuous improvement process**. You must be prepared to change your scope and sequence as you gauge your students' knowledge and areas of weakness. This may mean coming back to your benchmark cluster group to discuss reorganizing the presentation of certain skills and concepts from one grade to the next. It may mean establishing new strategies for individual students who are not keeping pace with the class. Flexibility, with a constant focus on the goal of helping every student achieve the standards, will be key to a successful standards-based classroom.

Through a similar continuous improvement process at the state level, the standards and benchmarks themselves may be changing. Data from state tests will suggest corrections in what must be emphasized to improve student performance. This may not be as comfortable as returning each year to a familiar teaching plan. What it loses in comfort, though, a standards-based system will make up in terms of measurably better student achievement, productive collaboration with co-workers, and the rewards of meeting clearly defined expectations.

PHASING IN STANDARDS-BASED INSTRUCTION

Standards-based instruction is a system with many individual yet interlocking pieces. Content standards, performance standards, statewide tests, school and district improvement plans . . . all must be developed in close correlation and within compatible timelines. Standards must be in place before testing can be established. A history of test results must exist before certificates of mastery can be awarded. And every aspect of this intricate system must go through regular evaluation and revision.

This section explains how various pieces of the standards-based instruction system relate to and build on each other. Understanding how new components will be phased in, and when each element of the system will be reviewed and revised, will help teachers, schools and districts make a smoother transition into their own standards-based programs.

Content Standards

The first content standards were adopted by the State Board of Education in September 1996. The Oregon Department of Education published them in January 1997 in a newspaper format sent to all teachers and principals.

This Introductory Packet contains those same content standards, with one important addition. The Oregon Department of Education has been developing *eligible content* for each of the content standards. The eligible content describes the knowledge and skills students must be able to demonstrate in order to achieve the standards. In this document, the eligible content for mathematics, English and science appear in italics; the eligible content for social sciences is still under development and will be published in a future document.

The content standards will be reviewed and updated approximately every two years. This will give educators time to apply the standards in the classroom and provide feedback on how they need to be changed. The revisions will not change the standards completely. There will be minor modifications, designed to clarify instruction and assessment, improve alignment with Oregon's college admission standards and respond to feedback on the curriculum load at various levels.

A team of curriculum, assessment and professional technical education specialists has already begun collecting proposed revisions to the standards. In November 1997, the Oregon Department of Education will provide opportunities for educators and others around the state to review and comment on draft revisions. The department will incorporate the comments it receives, and submit the draft to the State Board of Education for adoption in February 1998. Districts can expect updated standards to be available for the 1998-99 school year.

Testing

Statewide testing is being phased in by subject area. This year, students in grades 3, 5, 8 and 10 will be tested in English and mathematics; there will also be a statewide science test for grades 5, 8 and 10. Beginning in the 1998-99 school year, a statewide social sciences test will be added for grades 3, 5, 8 and 10. There will be no statewide tests in the arts and second languages. Districts will design their own assessments in those two subject areas, beginning with the arts in 1999-2000 and second languages in 2000-01.

The state tests at grades 3, 5 and 8 are designed as tools to help teachers and parents see where students are succeeding and where they need extra help. Students will have numerous opportunities to take the grade 10 test for the Certificate of Initial Mastery.

Performance standards

Performance standards describe the number, type and minimum scores required on local and state tests to meet the benchmarks at grades 3, 5, 8 and 10. The State Board of Education adopted performance standards in English and mathematics in 1996; standards for science will be presented for the Board's adoption in 1997, and standards for social sciences (history, civics, geography and economics) in 1998. Districts will develop their own performance standards and assess students in the arts and second languages, because the state will not test students in those two areas.

The performance standards will be reviewed and revised on a schedule that follows the adoption of revised content standards.

Certificate of Initial Mastery

Students will receive a Certificate of Initial Mastery when they achieve the state and district performance standards for grade 10. The CIM will be phased in by subject area over four years. The first CIMs, to be awarded to qualified students in 1998-99, will cover only English and mathematics. Each year thereafter, another subject area will be added to the CIM, until 2002-03, when the CIM will certify student mastery of English, mathematics, science, social sciences, the arts and a second language.

Certificate of Advanced Mastery

Students will receive a Certificate of Advanced Mastery when they:

- achieve grade 12 academic benchmarks in the same areas required for the Certificate of Initial Mastery—English, mathematics, science, social sciences, the arts and a second language;
- achieve career-related learning standards in teamwork, communication, problem-solving, personal management, career development, workplace systems and employment foundations;
- focus on a broad career area of interest such as arts and communications, business and management, industrial and engineering systems, natural resources, human resources or health services; and
- participate in career-related learning experiences in schools, workplaces and/or the local community.

In the 2004-05 school year, all schools in Oregon will award Certificates of Advanced Mastery to qualified students. Before then, the Oregon Department of Education will select schools to develop Certificate of Advanced Mastery programs and practices.

PASS Proficiencies

The Oregon State System of Higher Education is developing new admissions requirements for all freshmen applying to a four-year public institution in Oregon beginning in the fall of 2001. The Proficiency-based Admission Standards System (PASS) will be closely aligned with the Certificates of Initial and Advanced Mastery. PASS proficiency standards will be phased in by subject area. For example, students who achieve the Certificate of Initial Mastery in the spring of 1999, covering English and mathematics, will be expected to demonstrate proficiency in those same areas when applying for admission to a four-year Oregon public university in the fall of 2001.

PREP Standards

Oregon's community college system is developing standards to help students understand what it will take to succeed in various programs offered at two-year institutions. These standards, known as PRoficiencies for Entry into Programs (PREP), will be published in the fall of 1999.

The PREP standards will be used as a diagnostic tool, not a barrier to entry. Community colleges will remain open-door institutions. Students who do not meet PREP entry standards will be offered preparatory courses and activities to develop requisite knowledge and skills. PREP standards will be aligned with the Certificate of Advanced Mastery and PASS.

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CONTENT STANDARDS TIMELINE

	1997-98	1998-99	1999-00	2000-01
CONTENT STANDARDS IN PLACE	Standards adopted in September 1996 in place	Revised standards in place		
STATE TESTING IN PLACE Grades 3, 5, 8, 10	English Mathematics Science	English Mathematics Science Social Sciences		
STATE PERFORMANCE STANDARDS IN PLACE	English Mathematics Science	English Mathematics Science Social Sciences		
CIM AWARDED		English Mathematics	English Mathematics Science	English Mathematics Science Social Sciences
CAM AWARDED				English Mathematics Career-Related Learning
PASS PROFICIENCY EXPECTED FOR COLLEGE ADMISSION				
PREP REQUIRED FOR SELECTED COMMUNITY COLLEGE PROGRAMS			PREP program entrance standards published	

2001-02	2002-03	2003-04	2004-05	2005-06
Content standards will be reviewed and revised on a 2-year cycle.				
State testing in English, mathematics, science and social sciences; District testing in the arts and second languages				
State performance standards will be reviewed and revised on a 2-year cycle **Districts will set performance standards in the arts and second languages**				
English Mathematics Science Social Sciences The Arts	English Mathematics Science Social Sciences The Arts Second Language	**CIM fully implemented**		
CAM Models Developed in Selected Schools			CAM in All Schools	
English Mathematics Career-Related Learning Science	English Mathematics Career-Related Learning Science Social Sciences	English Mathematics Career-Related Learning Science Social Sciences The Arts	English Mathematics Science Social Sciences The Arts Second Language Career-Related Learning	**CAM fully implemented**
English Mathematics	English Mathematics Science	English Mathematics Science Social Sciences	English Mathematics Science Social Sciences The Arts	English Mathematics Science Social Sciences The Arts Second Language

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CONTENT STANDARDS

FOR

ENGLISH

English includes knowledge of the language itself, its use as a basic means of communication, and appreciation of its artistry as expressed in literature. English study develops fundamental communication skills, and prepares students to understand and use information and to communicate fluently and effectively.

READING: Comprehend a variety of printed materials.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Recognize, pronounce and know the meaning of words by using phonics, language structure, contextual clues and visual cues.	Recognize, pronounce and know the meaning of words in text.	Read accurately by using phonics, language structure, word meaning and visual cues. ▼ Read orally with natural phrasing, expressive interpretation, flow and pace. ▼	
		Determine meanings of words using contextual clues and illustrations. ●	Determine meanings of words using contextual clues, illustrations and other reading strategies. ●
		Students demonstrate ability to recognize and know the meaning of words by: ■ *using context clues to choose the correct meaning for given words on the state assessment. The clues may be presented in a directly stated phrase, or as an appositive to the unknown word. If a synonym is provided as a clue to meaning, it will be a more familiar word, or one of higher frequency in the typical third grade student's vocabulary.* ■ *using knowledge of common words in their compound or plural forms to help determine the meaning of words in the passage.* ■ *using illustrations such as pictures, charts, graphs or diagrams to help determine the meaning of words in the passage.*	*Students demonstrate ability to determine word meaning by:* ■ *using context clues to choose the correct meaning for identified words in the reading passage. The clues may be presented in a directly stated phrase, or as an appositive to the unknown word. If a synonym is provided as a clue to meaning, it will be a more familiar word, or one of higher frequency in the typical fifth grade student's vocabulary.* ■ *using knowledge of commonly used prefixes and suffixes to help define words in context. The student could also be asked to add a prefix or suffix in order to change the meaning of a word given in the passage.* ■ *using knowledge of contractions and possessives to help determine the meaning of words in the passage.* ■ *using illustrations such as pictures, charts, graphs or diagrams to determine the meaning of words in the passage.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Determine meanings of words using contextual and structural clues and other reading strategies. ●	Determine meanings of words, including those with multiple meanings, using contextual and structural clues and other reading strategies. ●	Determine meaning of words, including those with multiple, specialized or technical meanings, using contextual and structural clues and other reading strategies.
Students demonstrate ability to determine word meaning by: ▪ *using context clues to choose the correct meaning for given words or phrases. The clues may be presented in a directly stated phrase, or as an appositive to the unknown word. If a synonym is provided as a clue to meaning, it will be a more familiar word or one of higher frequency in the typical eighth grade student's vocabulary.* ▪ *using knowledge of commonly used prefixes and suffixes to help define words in context. The student could also be asked to add a prefix or suffix to a word in the passage in order to match a given definition.* ▪ *using grammatical elements (e.g., conjunctions, referent pronouns, prepositional phrases, dependent clauses, modifying words such as adjectives and adverbs that may be more commonly recognized in the noun or verb form) to determine the meaning of words used in the passage.* ▪ *recognizing how figurative language (e.g., colloquial expressions, idioms, metaphors) expresses implied meanings.* ▪ *using punctuation and print conventions which signal specific meanings or significant situations (e.g., question and exclamation marks or punctuation such as parentheses, underlining and/or italicized print that indicate titles or emphasis).* ▪ *using knowledge of contractions and possessives to help determine the meaning of words in the passage.*	*Students demonstrate ability to determine word meaning by:* ▪ *using context clues to choose the correct meaning for given words or phrases (including those with multiple meanings). The clues may be presented in a directly stated phrase, or as an appositive to the unknown word. If a synonym is provided as a clue to meaning, it will be a more familiar word, or one of higher frequency in the typical tenth grade student's vocabulary.* ▪ *using knowledge of commonly used prefixes and suffixes to help define words in context. (The student may also be asked to add a prefix or suffix to a word in the passage in order to match a given definition.)* ▪ *using grammatical elements (e.g., conjunctions, referent pronouns, prepositional phrases, dependent clauses, modifying words such as adjectives and adverbs that may be more commonly recognized in the noun or verb form) to determine the meaning of the word used in the passage.* ▪ *recognizing how figurative language (e.g., colloquial expressions, idioms, metaphors) signals connotative meanings.* ▪ *using punctuation and print conventions which signal specific meanings or significant situations (e.g., question and exclamation marks or punctuation such as parentheses, underlining and/or italicized print that indicate emphasis).* ▪ *using knowledge of contractions and possessives to help determine the meaning of words in the passage.*	

READING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Use a variety of reading strategies to increase comprehension and learning.	Locate information and clarify meaning by skimming, scanning, close reading and other reading strategies.	Locate information using illustrations, tables of contents, glossaries, indexes, headings, graphs, charts, diagrams and/or tables. ● *Students demonstrate their skill in locating information and clarifying meaning by:* ▪ *using tables of contents and indexes to locate specific information.* ▪ *using information in illustrations, charts, graphs and diagrams to help understand a reading passage.* ▪ *using a glossary to locate words and/or help clarify word meaning.*	Locate information and clarify meaning by using illustrations, tables of contents, glossaries, indexes, headings, graphs, charts, diagrams and/or tables. ● *Students demonstrate their skill in this category by:* ▪ *using tables of contents and indexes to locate specific information.* ▪ *using information in illustrations, graphs, charts, diagrams and tables to help understand a reading passage.* ▪ *using a glossary to locate words to help clarify meaning.* ▪ *using headings to locate the section of the reading material where needed information is likely to be found.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Locate information and clarify meaning by using tables of contents, glossaries, indexes, headings, graphs, charts, diagrams and/or tables. ● *Students demonstrate their skill in this category by:* ▪ *using tables of contents and indexes to locate specific information.* ▪ *using information in illustrations, graphs, charts, diagrams and tables to help understand a reading passage.* ▪ *using a glossary to locate words and/or help clarify meaning.* ▪ *using headings to locate the section of the reading material where needed information is likely to be found.*	Locate information and clarify meaning by using tables of contents, glossaries, indexes, headings, graphs, charts, diagrams, tables and other reference sources. ● *Students demonstrate their skill in this category by:* ▪ *using tables of contents and indexes to locate specific information.* ▪ *using information in graphs, charts, diagrams and tables to understand a reading passage. In grade 10, students may need to locate information from more than one area of a piece of supportive material such as a chart or to find information from multiple materials – e.g., chart and index.* ▪ *using a glossary to locate words and/or to help clarify meaning.* ▪ *using headings to locate the section of the reading material where needed information is likely to be found.* ▪ *finding information in passages from specialized materials (e.g., biographical or other specialized dictionary, thesaurus, atlas, encyclopedia, almanac, newspaper, magazine, catalog).*	Use table of contents, indexes, graphs, charts, diagrams, tables, glossary, and headings to locate specific information, clarify meaning and form conclusions.

READING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Demonstrate literal comprehension of a variety of printed materials.	Demonstrate literal comprehension of a variety of printed materials.	Retell, summarize or identify sequence of events, main ideas and facts in literary and informative selections. ● ▼ *Students must identify or produce from memory facts and other literal information directly stated in the passage by responding to items about:* ▪ *the order of events or a specific event from a sequence of events.* ▪ *a statement or sentence indicating the main idea of the selection.* ▪ *directly stated facts (actions or events; directions for an experiment or problem solving exercise; information from charts/graphs; names of characters, places or things in the selection; identification of special circumstances relevant to the story).*	Identify in literary, informative and practical selections sequence of events, main ideas, facts and supporting details. ● ▼ *Students must identify or remember facts and other literal information directly stated in the reading selection by:* ▪ *identifying the order of events or a specific event from a sequence of events.* ▪ *identifying a statement or sentence that best indicates the main idea of the selection.* ▪ *identifying directly stated facts (e.g., actions or events; directions for an experiment or problem solving exercise; information from charts/graphs; names of characters, places or things in the selection; special circumstances relevant to the story). Note that this section focuses on identifying facts; distinguishing between facts and opinions is covered in Evaluative Comprehension.* ▪ *identifying details such as key words, phrases or sentences that explicitly state important characteristics, circumstances, or similarities and differences in characters, times or places.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Identify in literary, informative and practical selections sequence of events, main ideas, facts, supporting details and opinions. ● ▼ *Students must identify or remember facts and other literal information directly stated in the reading selection by:* ▪ *identifying the order of events or a specific event from a sequence of events.* ▪ *identifying a statement or sentence that best indicates the main idea of the selection.* ▪ *identifying directly stated facts (e.g., actions or events; directions for an experiment or problem solving exercise; information from charts/graphs; names of characters, places or things in the selection; special circumstances relevant to the story).* ▪ *identifying details such as key words, phrases or sentences that explicitly state important characteristics, circumstances, or similarities and differences in characters, times or places.* ▪ *identifying directly stated opinions, including those introduced by transitional phrases which may provide clues as to when the author states an opinion.*	Identify in literary, informative and practical selections sequence of events, main ideas, facts, supporting details and opinions. ● ▼ *Students must identify or remember facts and other literal information directly stated in the reading selection by:* ▪ *identifying the order of events or a specific event from a sequence of events.* ▪ *identifying a statement or sentence indicating the main idea of the selection.* ▪ *identifying details such as key words, phrases or sentences that explicitly state important characteristics, circumstances, or similarities and differences in characters, times or places.* ▪ *identifying directly stated facts (e.g., actions or events; directions for an experiment or problem solving exercise; information from charts/graphs; names of characters, places or things in the selection; special circumstances relevant to the story).* ▪ *identifying directly stated opinions, including those introduced by transitional phrases which may provide clues as to when the author states an opinion.*	Summarize literal meaning and analyze and evaluate implied meaning in literary, informative and practical selections. Identify main ideas and evaluate opinions and significant supporting details in selections.

READING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Demonstrate inferential comprehension of a variety of printed materials.	Demonstrate inferential comprehension of a variety of printed materials.	Identify cause and effect relationships and make simple predictions. ● ▼	Identify relationships, images, patterns or symbols and draw conclusions about their meanings. ● ▼
		Students show they can infer meaning by: ▪ *identifying implicit cause and effect relationships (e.g., the relationship is not signaled by connecting words in the passage such as "therefore" or "because"; it is plausible, however—the effect follows the cause).* ▪ *predicting simple, possible future outcomes or actions (the passage contains sufficient clues which allow students to predict events that could logically follow).* ▪ *researching logical conclusions supported by the text.*	*Students show they can derive meaning by:* ▪ *identifying implicit relationships (relationships not directly stated) such as cause and effect, sequence-time relationships, comparisons, classifications and generalizations.* ▪ *predicting simple, probable future outcomes or actions. The passage contains sufficient clues to allow students to predict events that would logically follow.* ▪ *inferring an author's unstated intention(s) or meaning by drawing conclusions from images, patterns or symbols found in the passage. This requires application of background knowledge that is within the experience of most students at the fifth grade level.*

● Statewide Multiple-Choice Assessment
▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Identify relationships, images, patterns or symbols and draw conclusions about their meanings. ● ▼	Identify relationships, images, patterns or symbols and draw conclusions about their meanings. ● ▼	Analyze how methods of organization such as cause and effect and classification affect the clarity and impact of written materials.
Students show they can derive meaning by: ▪ *identifying implicit relationships (relationships not directly stated) such as cause and effect, sequence-time relationships, comparisons, classifications and generalizations.* ▪ *predicting probable future outcomes or actions. The passage contains sufficient clues to allow students to predict events that would logically follow.* ▪ *inferring an author's unstated intention(s) or meaning by drawing conclusions from images, patterns or symbols found in the passage. This requires application of background knowledge that is within the experience of most students at the eighth grade level.*	*Students show they can infer meaning by:* ▪ *identifying implicit relationships (relationships not directly stated) such as cause and effect, sequence-time relationships, comparisons, classifications and generalizations.* ▪ *predicting probable future outcomes or actions. The passage contains sufficient clues to allow students to predict events that would logically follow.* ▪ *inferring an author's unstated intention(s) or meaning by drawing conclusions from images, patterns or symbols found in the passage. This requires application of background knowledge that is within the experience of most students at the tenth grade level.*	

READING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Demonstrate evaluative comprehension of a variety of printed materials.	Demonstrate evaluative comprehension of a variety of printed materials.	NO BENCHMARK FOR GRADE 3	Analyze and evaluate information and form conclusions. ● ▼ *Students draw conclusions about:* ▪ *author's motivation or purpose.* ▪ *probable reasons for actions or beliefs.* ▪ *whether identified portions of the passage are facts or opinions.* ▪ *whether these are supported in the passage.*
Connect reading selections to other texts, experiences, issues and events. Read for enjoyment and information.	Draw connections and explain relationships between reading selections and other texts, experiences, issues and events.		Extend and deepen comprehension by relating text to other texts, experiences, issues and events. ▼ *Students:* ▪ *make connections between the selection and the reader's experiences and background knowledge of other texts, movies, television programs or music.* ▪ *make connections between the selection and issues or events in the community or world at large, past or present.*

● Statewide Multiple-Choice Assessment
▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Analyze and evaluate whether a conclusion is validated by the evidence in a selection. ● ▼	Analyze and evaluate whether an argument, action or policy is validated by the evidence in a selection. ● ▼	Analyze and evaluate the merit of an argument, action or policy by examining evidence offered in the material itself and by comparing the evidence with information available in other sources. Analyze the logic of all materials by evaluating such things as assumptions, generalizations, the use of abstractions and unstated implications.
Students demonstrate evaluative comprehension by determining whether: ▪ *information used to draw a conclusion is accurate.* ▪ *reasoning for a conclusion is based on fact rather than opinion.* ▪ *propaganda or other persuasion techniques influenced the conclusion.* ▪ *biases or stereotypes influenced the conclusion.* ▪ *the selection can be related to other issues or situations.*	*Students demonstrate evaluative comprehension by determining whether:* ▪ *supporting information is accurate, objective and/or authoritative.* ▪ *reasoning is based on fact rather than opinion.* ▪ *propaganda or other persuasion techniques are present in the passage.* ▪ *biases or stereotypes are present in the passage.* ▪ *an alternative position is validated by the evidence.*	
Extend and deepen comprehension by relating text to other texts, experiences, issues and events. ▼	Extend and deepen comprehension by relating text to other texts, experiences, issues and events. ▼	Extend comprehension beyond the text by relating it to personal experiences, community, state, national, or global issues and events.
Students: ▪ *make connections between the selection and the reader's experiences and background knowledge of other texts, movies, television programs or music.* ▪ *make connections between the selection and issues or events in the community or world at large, past or present.*	*Students:* ▪ *make connections between the selection and the reader's experiences and background knowledge of other texts, movies, television programs or music.* ▪ *make connections between the selection and issues or events in the community or world at large, past or present.*	

ENGLISH

WRITING: Use writing as a tool to learn, reflect and communicate for a variety of audiences and purposes.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Communicate knowledge of the topic, including relevant examples, facts, anecdotes and details.	Communicate knowledge of the topic, including relevant examples, facts, anecdotes and details.	Convey main ideas with some supporting details appropriate to audience and purpose. ● ▼ *Students address ideas and content in their writing by:* ▪ *providing easily identifiable purpose and main idea(s), although the main idea(s) may be obvious.* ▪ *using some supporting details, although they may be limited in scope, uneven, somewhat off-topic, too predictable, overly general, or based on questionable information.*	Convey clear, focused main ideas and supporting details appropriate to audience and purpose. ● ▼ *Students address ideas and content in their writing by:* ▪ *providing clear and easily identifiable purpose and main idea(s).* ▪ *providing relevant supporting details although they may be overly general or limited in places.* ▪ *providing content and selected details that consider audience and purpose although they may not be consistently well chosen.*
Structure information in clear sequence, making connections and transitions among ideas, sentences and paragraphs.	Structure information in clear sequence, making connections and transitions among ideas, sentences and paragraphs.	Demonstrate organization by developing a beginning, middle and end with some transitions. ● ▼ *Students demonstrate organization in their writing by:* ▪ *developing an identifiable beginning, middle and end. At this level, the beginning and end may be either underdeveloped or obvious.* ▪ *attempting sequencing, although attempts may occasionally be unclear.* ▪ *attempting transitions, although the same few might be overused.*	Demonstrate organization by developing a beginning, middle and end with clear sequencing of ideas and transitions. ● ▼ *Students demonstrate organization in their writing by:* ▪ *developing a recognizable beginning that introduces the audience to the topic.* ▪ *developing a clearly sequenced body that contains identification of main topics and supporting details about the topics.* ▪ *developing a conclusion (end) that summarizes or retells and communicates an ending.* ▪ *attempting transitions by using transitional words (e.g., first, then, finally, also).*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Convey clear, focused main ideas with accurate and relevant supporting details appropriate to audience and purpose. ● ▼ *Students address ideas and content in their writing by:* ■ *providing clear and easily identifiable purpose and main idea(s).* ■ *providing relevant supporting details although they may be overly general or limited in places.* ■ *providing content and selected details that consider audience and purpose.* ■ *using resources, when appropriate, to provide accurate support.*	Convey clear, focused main ideas with accurate and relevant supporting details appropriate to audience and purpose. ● ▼ *Students address ideas and content in their writing by:* ■ *providing clear and easily identifiable purpose and main idea(s).* ■ *providing relevant supporting details that develop the ideas adequately.* ■ *providing content and details that consistently show an awareness of audience and purpose.* ■ *using resources, when appropriate, to provide accurate support.*	Convey clear, focused main ideas and accurate and relevant supporting details appropriate to audience and purpose.
Demonstrate organization by developing a beginning, middle and end with clear sequencing of ideas and transitions. ● ▼ *Students demonstrate organization in their writing by:* ■ *developing a recognizable beginning that contains a clearly-stated topic.* ■ *developing a clearly sequenced body that is easy to follow with accurate placement of supporting details.* ■ *developing a conclusion (end) that summarizes or retells and communicates a planned ending.* ■ *using transitional words or phrases that are clear although they might be somewhat stilted.*	Demonstrate organization by developing a beginning, middle and end with clear sequencing of ideas and transitions. ● ▼ *Students demonstrate organization in their writing by:* ■ *developing an effective introduction that brings the audience to the topic.* ■ *developing a clearly sequenced body that is easy to follow with effective placement of supporting details.* ■ *developing a conclusion (end) that summarizes or retells and communicates an effective ending.* ■ *developing a variety of transitions that may include coordinating and subordinating conjunctions, repetition, and key phrases.*	Demonstrate organization through a variety of strategies that include a clear beginning, middle and end, appropriate to purpose and audience.

WRITING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Develop flow and rhythm of sentences.	Develop flow and rhythm of sentences.	**NO BENCHMARK FOR GRADE 3**	Write sentences that flow and vary in length. ● ▼ *Students demonstrate sentence fluency in their writing by:* ▪ *correctly using simple sentences.* ▪ *attempting to use complex sentences but sometimes showing limited control.* ▪ *attempting to vary sentence length and beginnings.* ▪ *creating sentences that flow together and sound natural (not choppy).*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

Grade 8 Benchmark	**CIM/Grade 10 Benchmark**	**CAM/Grade 12 Benchmark**
Use complex sentences to increase variety in sentence structure. ● ▼	Use appropriate sentence structures such as parallel structure to enhance meaning. ● ▼	Write fluent sentences that demonstrate a variety of beginnings, lengths and structures to enhance meaning.
Students demonstrate sentence fluency in their writing by: ▪ *showing a strong control of simple sentences.* ▪ *using complex sentences for variety in sentence structure, with variable control.* ▪ *developing sentences that vary in length and beginnings, although some repeated patterns may detract from the overall impact.* ▪ *creating a natural sound that allows the reader to move easily through the piece.*	*Students demonstrate sentence fluency in their writing by:* ▪ *showing a strong and consistent control of simple sentences.* ▪ *developing a variety of sentence structures with some success at complex patterns.* ▪ *developing a variety of sentence beginnings (e.g., introductory words, phrases or clauses that begin with prepositions, adverbs, participles) and a variety of sentence lengths.* ▪ *creating a natural sound that allows the reader to move easily through the piece.*	

WRITING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Demonstrate knowledge of spelling, grammar, punctuation, capitalization, paragraphing and documentation.	Use correct spelling, grammar, punctuation, capitalization, paragraph structure, sentence construction and other writing conventions.	Demonstrate some control of correct spelling, grammar, punctuation and capitalization. ● ▼ *Students demonstrate skills in conventions by:* *SPELLING* ▪ *correctly spelling common words appropriate to grade level.* ▪ *limiting use of phonetic spelling to uncommon or difficult words.* *GRAMMAR and USAGE* ▪ *using correct subject-verb agreement in simple sentences.* ▪ *conveying meaning.* *PUNCTUATION* ▪ *using correct end of sentence punctuation* ▪ *correctly placing commas in dates and in a series.* *CAPITALIZATION* ▪ *correctly capitalizing sentence beginnings, proper nouns, titles, and the pronoun "I."*	Use correct spelling, grammar, punctuation, capitalization and paragraphing. ● ▼ *Students demonstrate skills in conventions by:* *SPELLING* ▪ *correctly spelling common words appropriate to grade level.* ▪ *limiting the use of phonetic spelling to uncommon or difficult words.* *GRAMMAR and USAGE* ▪ *showing basic control of subject-verb agreement although there may be a few lapses.* ▪ *using a generally consistent point of view (first, second, third person).* *PUNCTUATION* ▪ *using correct end of sentence punctuation.* ▪ *correctly placing commas in dates, in a series and after introductory words.* ▪ *using apostrophes in contractions and singular possessives.* *CAPITALIZATION* ▪ *correctly capitalizing sentence beginnings, proper nouns, titles, abbreviations and pronoun "I."* *PARAGRAPHING* ▪ *attempting accurate paragraph breaks.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

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Grade 8 Benchmark	**CIM/Grade 10 Benchmark**	**CAM/Grade 12 Benchmark**
Use correct spelling, grammar, punctuation, capitalization, paragraphing and documentation. ● ▼	Use correct spelling, grammar, punctuation, capitalization, paragraphing and documentation. ● ▼	Skillfully and correctly use a wide range of writing conventions (e.g., correct spelling, grammar, punctuation, capitalization, paragraphing, documentation) and formatting to enhance meaning.
Students demonstrate skills in conventions by: *SPELLING* ▪ *correctly spelling common words appropriate to grade level.* ▪ *limiting misspellings to more difficult words.* *GRAMMAR and USAGE* ▪ *showing basic control of noun/pronoun and subject-verb agreement.* ▪ *generally using a consistent verb tense.* ▪ *using a consistent point of view (first, second, third person).* *PUNCTUATION* ▪ *using correct end of sentence punctuation.* ▪ *correctly placing commas in dates and series.* ▪ *including internal punctuation (commas, colons, semi-colons).* ▪ *correctly using apostrophes in contractions and singular possessives.* ▪ *correctly using quotation marks when appropriate.* *CAPITALIZATION* ▪ *correctly capitalizing, including within quotation marks.* *PARAGRAPHING* ▪ *making sound paragraph breaks, including when speaker changes in dialogue.* *CITING SOURCES* ▪ *Classroom work samples (research paper) only; not covered on statewide writing assessment.* ▼	*Students demonstrate skills in conventions by:* *SPELLING* ▪ *correctly spelling common words appropriate to grade level.* *GRAMMAR and USAGE* ▪ *showing solid control of subject-verb agreement.* ▪ *showing general control of noun/pronoun agreement.* ▪ *maintaining consistent verb tense.* ▪ *maintaining correct usage of irregular verb forms.* ▪ *showing consistent control of point of view (first, second, third person).* *PUNCTUATION* ▪ *correctly punctuating ends of sentences.* ▪ *correctly using commas (after introductory phrases, in compound sentences, in a series) with few errors.* ▪ *generally using correct internal punctuation.* ▪ *correctly using apostrophes in contractions and singular possessives.* *CAPITALIZATION* ▪ *correctly capitalizing, including within quotation marks.* *PARAGRAPHING* ▪ *including paragraph breaks that reinforce organizational structure.* *CITING SOURCES* ▪ *Classroom work samples (research paper) only; not covered on statewide writing assessment.* ▼	

WRITING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Express ideas in an engaging and credible way appropriate for audience and purpose.	NO CONTENT STANDARD FOR VOICE		
NOTE: While voice is scored on the statewide writing assessment, it is not part of the performance standard.			
Select functional, precise and descriptive words appropriate for audience and purpose.	NO CONTENT STANDARD FOR WORD CHOICE		
NOTE: While word choice is scored on the statewide writing assessment, it is not part of the performance standard.			

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK

WRITING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Use a variety of modes (e.g., narrative, imaginative, expository, persuasive) in appropriate contexts. Use a variety of written forms (e.g., journals, essays, short stories, poems, research papers, business communications and technical writing) to express ideas and multiple media to create projects, presentations and publications. Reflect upon and evaluate own writing. Use multi-step writing process (e.g., identify audience and purpose, generate ideas, plan and draft, collaborate and confer, revise and publish) to express ideas.	Use a variety of modes and written forms to express ideas.	Use a variety of modes (e.g., narrative, imaginative, expository, persuasive). ● ▼	Use a variety of modes (e.g., narrative, imaginative, expository, persuasive) and forms (e.g., essays, stories, reports) to express ideas appropriate to audience and purpose. ● ▼

NOTES:

- **Mode is addressed through the writing prompts on the statewide assessment and through the design of classroom work samples or assignments.**
- **Using a variety of written forms is part of the performance standard for classroom work samples.**

● Statewide Multiple-Choice Assessment
▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Use a variety of modes (e.g., narrative, imaginative, expository, persuasive) and forms (e.g., essays, stories, business memos or communications, research papers or technical reports) to express ideas appropriate to audience and purpose. ● ▼	Use a variety of modes (e.g., narrative, imaginative, expository, persuasive) and forms (e.g., essays, stories, business memos or communications, research papers or technical reports) to express ideas appropriate to audience and purpose. ● ▼	Use a variety of modes (e.g., narrative or imaginative, expository, persuasive) and forms (e.g., essays, stories, business memos or communications, research papers, technical reports) to express ideas appropriate to audience and purpose.

SPEAKING AND LISTENING: Speak effectively for a variety of audiences and purposes and listen effectively to gather information.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
SPEAKING Communicate knowledge of the topic, including relevant examples, facts, anecdotes and details.	Communicate knowledge of the topic, including relevant examples, facts, anecdotes and details.	Convey main ideas with some supporting details appropriate to audience and purpose. ▼	Convey clear, focused main ideas with supporting details appropriate to audience and purpose. ▼
Structure information in clear sequence, making connections and transitions among ideas, sentences and paragraphs.	Structure information in clear sequence, making connections and transitions among ideas, sentences and paragraphs.	Demonstrate organization by developing a beginning, middle and end with some transitions. ▼	Demonstrate organization by developing a beginning, middle and end with clear sequencing of ideas and transitions. ▼
Select words that are correct, functional and appropriate to audience and purpose.	Select words that are correct, functional and appropriate to audience and purpose. ▼		Use descriptive and accurate words appropriate to audience and purpose. ▼
Demonstrate control of eye contact, speaking rate, volume, enunciation, inflection, gestures and other nonverbal techniques.	Use eye contact, speaking rate, volume, enunciation, oral fluency, vocal energy and gestures to communicate ideas effectively when speaking. ▼	Demonstrate some control of eye contact and speak at an appropriate rate and volume. ▼	Demonstrate control of eye contact, speaking rate, volume, enunciation and gestures appropriate to audience and purpose. ▼
LISTENING Analyze and evaluate verbal and nonverbal messages and the way they are delivered. Demonstrate effective listening strategies.			

NOTE: Listening is addressed in classroom instruction only.

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Convey clear, focused main ideas with accurate and relevant supporting details appropriate to audience and purpose. ▼	Convey clear, focused main ideas with accurate and relevant supporting details appropriate to audience and purpose. ▼	Convey clear, focused main ideas with accurate, relevant supporting details, including documentation of sources and definitions of technical terms, appropriate to audience and purpose.
Demonstrate organization by developing a beginning, middle and end and by providing clear sequencing of ideas and transitions. ▼	Demonstrate organization by developing a beginning, middle and end and by providing clear sequencing of ideas and transitions. ▼	Demonstrate organization through a variety of strategies that include a clear beginning, middle and end, appropriate to purpose and audience.
Use descriptive and accurate words appropriate to audience and purpose. ▼	Use a variety of descriptive and accurate words appropriate to audience and purpose. ▼	Use a variety of descriptive and accurate words and visual aids appropriate to audience and purpose.
Demonstrate control of eye contact, speaking rate, volume, enunciation and gestures appropriate to audience and purpose. ▼	Demonstrate fluent delivery with varied inflections, effective eye contact, speaking rate, volume, enunciation and gestures appropriate to audience and purpose. ▼	Demonstrate natural and fluent delivery with varied inflections, effective eye contact, speaking rate, volume, enunciation, gestures and posture appropriate to audience and purpose.

LITERATURE: Understand how literature records, reflects, communicates and influences human events.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Read a variety of literary forms (e.g., novels, poems, plays, short stories, autobiographies, essays) of varying complexity from a variety of cultures and time periods.	Read selections from a variety of cultures and time periods and recognize distinguishing characteristics of various literary forms.	Read and identify stories, poems, plays and nonfiction from a variety of cultures and time periods. ● ▼	Read and identify literary forms, including novels, short stories, poetry, plays and nonfiction from a variety of cultures and time periods. ● ▼
		The breadth of reading required by this benchmark is documented in classroom work samples. On the state assessment, passages reflect various cultures and time periods and come from significant children's literature (works not frequently anthologized but by well-known authors). They include stories (e.g., humor, fable, mystery, folk tale), nonfiction (e.g., informational article, biography, autobiography), poems and plays from a variety of cultures and time periods. Students demonstrate their knowledge of these various literary forms by: ▪ *identifying whether a passage is from a story, poem, play or non-fiction.* ▪ *identifying which definition of a literary form fits the passage read.* ▪ *identifying where a selection may be categorized in the library.* ▪ *identifying a passage which is similar in form to the test selection.* ▪ *identifying a pattern representative of a given form.*	*The breadth of reading required by this benchmark is documented in classroom work samples. On the state assessment, passages come from significant children's literature (works not frequently anthologized but by well-known authors). They include novels, short stories (e.g., humor, fable, mystery, folk tale, historical fiction), nonfiction (e.g., informational article, biography, autobiography), poems and plays. Students demonstrate their knowledge of these various literary forms by:* ▪ *identifying whether a passage is from a story, poem, play or non-fiction.* ▪ *identifying which definition of a literary form fits the passage read.* ▪ *identifying where the source of a passage may be categorized in the library.* ▪ *identifying a passage which is similar in form to the test selection.* ▪ *identifying a pattern representative of a given form.* ▪ *distinguishing the difference between two or more literary forms.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Read and identify distinguishing characteristics of a variety of literary forms, including novels, short stories, poetry, plays and nonfiction from a variety of cultures and time periods. ● ▼	Read and identify distinguishing characteristics of a variety of literary forms, including novels, short stories, poetry, plays and nonfiction from a variety of cultures and time periods. ● ▼	Read and interpret distinguishing characteristics of a variety of literary forms including novels, short stories, plays and non-fiction selections from a variety of cultures and time periods.
The breadth of reading required by this benchmark is documented in classroom work samples. On the state assessment, passages reflect various cultures and time periods and come from young adolescent literature including novels and short stories (e.g., humor, fable, mystery, folk tale, historical fiction, realistic fiction, science fiction), nonfiction (e.g., informational article, biography, autobiography), poems and plays. Students demonstrate their ability to distinguish characteristics of literary forms by: ▪ *identifying characteristics of given passages (e.g., poem: rhyme, rhythm, repetition of sounds, fewer words than prose).* ▪ *distinguishing between various literary forms (e.g., biography versus autobiography).* ▪ *identifying where the source of a passage may be categorized in the library.*	*The breadth of reading required by this benchmark is documented in classroom work samples. On the state assessment, passages reflect various cultures and time periods and come from a variety of literary forms including novels, short stories (e.g., humor, fable, mystery, folk tale, historical fiction, realistic fiction, science fiction, satire), nonfiction (e.g., informational article, biography, autobiography), poems and plays. Students demonstrate their ability to distinguish characteristics of literary forms by:* ▪ *identifying characteristics of given passages (e.g., autobiography: true story of a person's life told by that person; drama: predominance of dialogue, inclusion of stage directions).* ▪ *distinguishing differences between various literary forms (e.g., science fiction versus fiction).* ▪ *identifying where the source of a passage may be categorized in the library.*	

LITERATURE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Evaluate how the form of a literary work and the use of literary elements and devices (e.g., setting, plot, theme, character, word choice, point of view, tone, language) contribute to the work's message and impact.	Analyze the author's ideas, techniques and methods and make supported evaluations about the selection.	Identify elements of literature such as character, plot and setting. ● ▼	Analyze how the development of character, plot and setting contribute to the overall impact of the selection. ● ▼ Identify theme in a literary work. ● ▼ Identify literary devices such as similes, rhyme and dialogue. ● ▼ Identify the author's purpose and recognize how structure and word choice contribute to it. ● ▼
		Passages which contain examples of character, plot and setting are included. Students demonstrate their knowledge of these literary elements by ▪ *identifying examples of character (main and supporting).* ▪ *identifying events important to the development of the plot.* ▪ *identifying setting, including place and time period of a story.*	*Passages are provided from several literary works which contain examples of character, plot and setting, an identifiable theme, and literary devices. Students demonstrate their ability to analyze the author's use of these literary elements by* ▪ *identifying how literary elements contribute to the overall impact of a selection (e.g., how the setting contributes to mood).* ▪ *identifying the theme of a selection (e.g., showing courage, treating parents with respect).* ▪ *identifying which type of literary device is used in a given passage or which passage is an example of a given literary device (e.g., identifying simile, metaphor or personification in a passage; identifying examples of sound devices such as alliteration, onomatopoeia or rhyme patterns).* ▪ *identifying how decisions the author makes about structure and/or word choice contribute to the author's purpose.* ▪ *identifying how dialogue is used to develop characters and mood in a selection.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Evaluate the effectiveness of literary elements such as character, plot, setting, theme and conflict/resolution on the overall impact of the selection. ● ▼ Identify and examine the treatment of similar themes in various literary works. ▼ Examine the purpose of literary devices such as figurative language, allusion, dialect and dialogue in a literary selection. ● ▼ Identify the author's purpose and examine how stylistic decisions (e.g., structure, point of view, word choice, exaggeration) contribute to it. ● ▼	Evaluate the effectiveness of literary elements such as character, plot, setting, theme, conflict and resolution on the overall impact of the selection. ● ▼ Identify and examine the treatment of similar themes in various literary works. ▼ Examine literary devices such as figurative language, allusion, dialect, dialogue and symbolism and analyze their impact on a selection. ● ▼ Identify the author's purpose and analyze how stylistic decisions (e.g., structure, point of view, word choice, exaggeration) contribute to it. ● ▼	Evaluate the effectiveness of literary elements such as character, plot, setting, theme, conflict and resolution on the overall impact of the selection. Identify and evaluate thematic connections among literary texts and contemporary issues and events. Identify and evaluate the effectiveness of culturally and historically unique literary devices (e.g., figurative language, allusion, dialect, song, irony, symbolism). Identify the author's purpose and analyze and evaluate how stylistic decisions (e.g., structure, point of view, word choice, exaggeration) contribute to it.
Passages are provided from several literary works which contain examples of character, plot and setting; an identifiable theme; and literary devices. Students demonstrate their ability to make supported evaluations about a selection by ▪ *judging how well literary elements contribute to the overall impact of a selection (e.g., importance of the setting to create a mood).* ▪ *identifying a similar theme (e.g., lessons about life) in at least two passages and determining similarities and differences in their treatment.* ▪ *identifying literary devices (figurative language, allusion, sound devices, versification, foreshadowing, imagery, irony, hyperbole) and determining the purpose of their use (e.g., metaphors used to create an image).* ▪ *identifying the author's purpose in writing a given passage (e.g., using first person sets a particular tone) and how stylistic decisions contribute to it (e.g., exaggeration sets a humorous tone, structure is used to build suspense).* ▪ *identifying clues to time periods and cultures represented (e.g., use of vocabulary associated with a specific time period, region or country).*	*Passages are provided from several literary works which contain examples of character, plot and setting; an identifiable theme; and literary devices. Students demonstrate their ability to make supported evaluations about a selection by:* ▪ *judging how well literary elements contribute to the overall impact of a selection (e.g., character development makes the story come alive).* ▪ *identifying a similar theme in at least two passages (e.g., dignity of the human soul) and determining similarities and differences in their treatment.* ▪ *identifying the purpose of literary devices (figurative language, allusion, sound devices, versification, foreshadowing, imagery, irony, hyperbole, dialect) and determining their impact (e.g., figurative language provides vivid images, sound devices in poetry produce a poem with a musical quality).* ▪ *identifying the author's purpose in writing a given passage (e.g., first paragraph sets up conflict) and how stylistic decisions contribute to it (e.g., word choice promotes strong emotions).* ▪ *identifying how dialogue is used to develop characters and mood in a selection.*	

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LITERATURE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Understand how literature is influenced by historical, cultural, social and biographical factors.	Analyze how literary works both influence and are influenced by history, society, culture and the author's life experiences.	Compare fables and stories from two or more cultures. ▼	Describe the ways in which a writer has been influenced by life experiences. ▼ *The reader is asked to consider the external influences that led to the creation of work: the author's life experiences and/or the influences that social and historical perspectives might have had on the work's theme. When appropriate, students are asked to evaluate the impact of the selection on the society and culture that existed when it was created as well as the selection's lasting impact.* *When responding to grade level* ***literary*** *and* ***nonliterary*** *(informative) texts, the reader:* ▪ *uses knowledge of the author's life to identify how the author's experiences influenced the content of the selection.*

● Statewide Multiple-Choice Assessment
▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Make connections between literary themes or messages and historical, social and cultural issues or events. ▼	Analyze and evaluate the ways in which a writer has influenced or has been influenced by historical, social and cultural issues or events. ▼	Analyze and evaluate the ways in which a writer has influenced or has been influenced by life experiences and historical, social and cultural issues or events.
The reader is asked to consider the external influences that led to the creation of work: the author's life experiences and/or the influences that social and historical perspectives might have had on the work's theme. When appropriate, students are asked to evaluate the impact of the selection on the society and culture that existed when it was created as well as the selection's lasting impact.	*The reader is asked to consider the external influences that led to the creation of work: the author's life experiences and/or the influences that social and historical perspectives might have had on the work's theme. When appropriate, students are asked to evaluate the impact of the selection on the society and culture that existed when it was created as well as the selection's lasting impact.*	
When responding to grade level ***literary*** *and* ***nonliterary*** *(informative) texts, the reader:* ▪ *uses knowledge of the author's life to identify how the author's experiences influenced the style and content of the selection.* ▪ *identifies specific historical events that impacted the style and content of the selection.* ▪ *identifies the connection between the selection's theme(s) and social and cultural issues that existed when the selection was written.*	*When responding to grade level* ***literary*** *and* ***nonliterary*** *(informative) texts, the reader:* ▪ *uses knowledge of the author's life to analyze how the author's experiences and background influenced the style and content of the selection.* ▪ *analyzes and evaluates how specified historical events impacted the content and style of the selection.* ▪ *analyzes how the selection's theme(s) are products of social and cultural issues that existed when the selection was written.* ▪ *when appropriate, analyzes and evaluates the ways in which the selection's author has influenced historical, social and cultural issues of events.*	

MEDIA AND TECHNOLOGY: Use a variety of media and technology to obtain and communicate information.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Select and apply appropriate media and technology (current and emerging) to a task or topic. Acquire information from print, visual and electronic sources, including the Internet. Produce visual forms that enhance the impact of a product or presentation. Record and store data in a variety of formats (e.g., data bases, audiotapes, videotapes). Demonstrate ethical use of resources and materials (e.g., copyright, citations of sources). Evaluate significance and accuracy of information and ideas presented in written, oral and visual communications.			

NOTE: Media and technology are addressed in classroom instruction only.

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▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK

CONTENT STANDARDS

FOR

MATHEMATICS

Mathematics uses numbers and symbols to define, communicate and solve problems.

CALCULATIONS AND ESTIMATIONS: Select and apply mathematical operations in a variety of contexts.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
COMPUTATION			
Read, write and order real numbers. Demonstrate meanings of numbers (e.g., whole numbers, fractions, decimals, integers, rational numbers, percents, exponents, square roots, real numbers, absolute value, scientific notation) using physical models and technology. Construct, use and explain procedures to compute. Select and use appropriate methods and tools for computing with numbers (e.g., mental calculation, paper and pencil, calculator, computer) and determine whether results are accurate and reasonable.	Compute with whole numbers, fractions, decimals, integers using paper and pencil, calculators and computers.	Perform whole number calculations using paper and pencil and calculators. ● *Students will:* ▪ *order first through tenth, in numeric (i.e., 1st) or word form (i.e., first)* ▪ *add three-digit plus three-digit whole numbers with regrouping* ▪ *subtract three-digit plus three-digit whole numbers with regrouping* ▪ *multiply single digit numbers* ▪ *divide two-digit whole numbers divided by single-digit whole numbers with no remainder* ▪ *name simple fractions with numerators and single-digit common denominators from pictorial representations.*	Model, explain and perform calculations on whole numbers, fractions and decimals, using paper and pencil and calculators. ● *Students will:* ▪ *identify correct operations for solving word problems* ▪ *pose equivalent questions for word problems* ▪ *identify the order of operations for multiple-step calculations. (Calculations include addition, subtraction, multiplication and division)* ▪ *interpret pictorial representations of percents.* *Students will demonstrate these skills by performing or explaining the following operations:* ▪ *reading numbers from the millions place to the thousandths place* ▪ *ordering whole numbers, fractions with single-digit numerators and unlike denominators, and decimals to the thousandths* ▪ *adding and subtracting up to five-digit numbers with regrouping* ▪ *multiplying up to two-digit numbers* ▪ *dividing up to three-digit by one-digit numbers with remainders* ▪ *performing all fraction operations with common denominators, no improper fractions* ▪ *performing all decimal operations to hundredths, division terminating at thousandths* ▪ *recognizing negative numbers (e.g., using temperature or number lines)* ▪ *recognizing common percentages (e.g., 25%, 50%, 75%).*

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▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Perform calculations on whole numbers, fractions, decimals and integers using paper and pencil, calculators and/or computers. ● ▼	Perform numeric and algebraic calculations using paper and pencil, calculators and computer programs. ● ▼	Using appropriate technology (e.g., graphic calculator or computer application), perform calculations involving: matrices, and all real numbers, including their absolute values and numbers in exponential radical, and scientific notation form.
Students will: ▪ *read numbers from the millions place to the thousandths place* ▪ *order whole numbers, fractions and decimals* ▪ *multiply by three- or more-digit numbers in context* ▪ *divide up to four-digit numbers by two-digit numbers in context* ▪ *perform any fraction operations with ruler denominators (2, 4, 8, 16), including improper fractions* ▪ *perform any decimal operations* ▪ *identify correct operations for solving word problems* ▪ *pose equivalent questions for word problems* ▪ *identify the order of operations for multiple-step calculations.*	*Students will:* ▪ *solve real number problems posed as direct calculations, word problems, or in chart or graph form* ▪ *order lists of up to five numbers, using words like largest or smallest, and greater than and less than symbols.*	

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CALCULATIONS AND ESTIMATIONS (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
ESTIMATION			
Use number sense to estimate and justify solutions to problems. Develop, apply and explain a variety of estimation strategies and assess their appropriateness.	Use estimation to solve problems and check the accuracy of solutions.	Estimate solutions to problems and determine if the results are accurate and reasonable. ●	Estimate solutions to problems and determine if the results are accurate and reasonable. ●
		Students will: ▪ *round one-, two- or three-digit whole numbers to the nearest 10, 100 and 1,000 for addition and subtraction problems* ▪ *directly estimate real-world events to the nearest 10, and 100 (e.g., grocery bill)* ▪ *round one-, two- and three-digit compatible whole numbers to the nearest 10 or 100 for multiplication and division applications* ▪ *determine cost to the nearest dollar for amounts under $100.*	*Students will:* ▪ *round (with ranges from the nearest hundredth to the nearest ten-thousand) to estimate answers to calculations* ▪ *recognize which place will be the most helpful in estimating an answer* ▪ *multiply by powers of ten up to 1,000 to simplify calculations* ▪ *use front-end estimation to predict ranges for quotients.*

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▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Estimate solutions to problems and determine if the results are accurate and reasonable. ●	Estimate solutions to problems and determine if the results are accurate and reasonable. ●	Estimate solutions to problems and determine if the results are accurate and reasonable. Identify the areas for potential errors when using technology.
Students will use integers to: ▪ *round (with ranges from the nearest thousandth to the nearest million) to estimate answers to calculations* ▪ *recognize which place will be the most helpful in estimating an answer* ▪ *multiply by powers of 10 up to 1,000 to simplify calculations* ▪ *use front-end estimation to predict ranges for quotients.* *In addition, students will round percentages, ratios and fractions.*	*Students will:* ▪ *round to estimate answers to calculations* ▪ *recognize which place value will be the most helpful in estimating an answer* ▪ *multiply by powers of 10 to simplify calculations* ▪ *use front-end estimation to predict ranges for quotients.*	

CALCULATIONS AND ESTIMATIONS (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
APPLICATION OF NUMBER THEORIES, RULES AND ALGORITHMS			
Apply number theory concepts to represent numbers in various ways. Demonstrate relationships among numbers (e.g., fractions, decimals, percents, ratios, proportions). Use physical models to demonstrate conceptual meanings for addition, subtraction, multiplication and division. Use ratios, proportions and percents to solve problems. Develop, test and explain real number concepts. Construct and apply mathematical rules and algorithms to solve problems.	Apply number theories, mathematical rules and algorithms to solve problems.	Apply concepts of place value and grouping in whole number operations. ● *Students will apply:* ▪ *place values from hundredths (using money) to thousands, inclusive* ▪ *addition and subtraction of three-digit numbers to assess regrouping skills* ▪ *the concept of odd and even numbers.*	Apply concepts of primes, factors and multiples in whole number, fraction and decimal operations. ● *Students will:* ▪ *use place values from thousandths through millions* ▪ *use factors and multiples to reduce fractions to lowest terms and identify fraction equivalents* ▪ *recognize primes less than 100* ▪ *recognize other number theory concepts, such as additive and multiplicative identities and inverses.*

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▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Demonstrate the relationships among whole number, decimal, fraction, percent, exponent and integer operations. ●	Use the relationships among whole number, decimal, fraction, percent, exponent and integer operations. ●	Apply an understanding of different number systems to solve problems.
Students will: ▪ *identify prime numbers less than 100* ▪ *factor natural numbers less than 1,000* ▪ *determine and use ratios and proportions to solve problems* ▪ *recognize and use scientific notation, square roots and exponents* ▪ *recognize and use order of operation rules.*	*Students will apply:* ▪ *equivalent forms of real numbers* ▪ *factors and greatest common factor* ▪ *multiples and least common multiple* ▪ *prime numbers and prime factorization* ▪ *additive and multiplicative properties of zero, one and negative one* ▪ *ratios and proportions to solve problems.*	

MATHEMATICS

MEASUREMENT: Select and use units and tools of measurement.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
UNITS AND TOOLS			
Select and use appropriate standard and nonstandard units and tools of measurement. Select and use appropriate units, tools and techniques to measure to the degree of precision and accuracy desired in particular situations. Develop physical references for commonly used measures.	Develop understanding of measurement and apply appropriate units and tools.	Develop understanding of measurement and concepts related to length, perimeter, weight, area, volume, time, temperature, money and angle. ● *Students will choose the most appropriate tool and unit of measurement for common, everyday objects including:* ▪ *length—inch, foot, yard, mile, centimeter, meter, kilometer* ▪ *perimeter—addition of units of length* ▪ *weight—ounce, pound, gram, kilogram* ▪ *area—in rectangular shapes* ▪ *volume (capacity)—teaspoon, tablespoon, cup, pint, quart, gallon, milliliter, liter* ▪ *time—second, minute, hour, day, week, month, year* ▪ *temperature—degrees Fahrenheit, degrees Celsius* ▪ *money—recognition of all coins, change from $1.00* ▪ *angle—degrees.*	Develop understanding of measurement related to length, perimeter, weight, area, volume, time, temperature, money and angle. ● *Students will use the following units:* ▪ *length—inch, foot, yard, mile, centimeter, meter, kilometer* ▪ *perimeter—addition of units of length* ▪ *weight—ounce, pound, gram, kilogram, ton* ▪ *area—in rectangular shapes* ▪ *volume (capacity)—teaspoon, tablespoon, cup, pint, quart, gallon, milliliter, liter* ▪ *time—second, minute, hour, day, week, month, year* ▪ *temperature—degrees Fahrenheit, degrees Celsius* ▪ *money—recognition of all coins, change from $100.00* ▪ *angle—degrees.* *In addition, students will:* ▪ *determine perimeter, area and volume from given lengths of sides of figures and everyday items such as floors, fields and boxes* ▪ *understand and apply the concept of division of a surface into unit squares* ▪ *understand and apply the concept of division of a rectangular solid into unit cubes* ▪ *solve a variety of word problems with monetary amounts, finding totals and change due for amounts under $100.00.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Select and use appropriate units and tools to measure to the degree of accuracy required in particular situations. ● ▼	Apply appropriate units and tools to measure to the degree of accuracy required in particular situations. ● ▼	Demonstrate an understanding of precision and error in measurement.
Students will solve problems with any of the units from previous benchmark levels (length, perimeter, weight, area, volume, time, temperature, money, angle). *In addition, students will:* ▪ *calculate miles per hour and miles per gallon in multiple-step problems* ▪ *demonstrate understanding of the relationship between compass setting and the diameter of a circle* ▪ *work with angles measured in degrees from 0 to 360* ▪ *identify combinations of angles that are complementary or supplementary* ▪ *identify changes in area and volume in relation to changes in linear measures of figures.*	*Students will solve problems with any of the units from previous benchmark levels (length, perimeter, weight, area, volume, time, temperature, money, angle) including squared and cubic units where appropriate.* *In addition, students will:* ▪ *determine margin of error, error due to rounding, and the degree of accuracy of a measurement for a given problem-solving application.*	

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MATHEMATICS

MEASUREMENT (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
DIRECT METHODS			
Describe, estimate and use measures of length, perimeter, weight, time, temperature, money and capacity.	Apply direct methods of measurement in metric, U.S. customary and other systems.	Measure length, weight, area, time and temperature using standard and nonstandard units of measurement. ● ▼	Measure length, weight, area, time, temperature, volume and angle using standard and nonstandard units of measurement. ● ▼
Read and interpret various scales (e.g., number lines, graphs, maps).			
Relate change in an object's linear measurements to change in its perimeter, area and/or volume.		*Students will measure in:* ▪ *length—inches, feet, yards, centimeter* ▪ *weight—pounds, kilograms* ▪ *area—square units* ▪ *time—minutes, hours, days* ▪ *temperature—degrees Fahrenheit and Celsius.*	*Using any customary U.S. or metric units, students will:* ▪ *read measurements from illustrations of rulers, clocks (digital or analog) and thermometers* ▪ *calculate perimeter, area and volume from measurements given of sides of polygons and edges of rectangular solids*

NOTE: Most actual measuring events will be assessed in the student work sample.

● Statewide Multiple-Choice Assessment
▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Measure perimeter, weight, area, temperature, volume, angle and distance using standard and nonstandard units of measurement. ● ▼	Measure perimeter, weight, area, temperature, volume, angle and distance of regular and irregular shapes using standard and nonstandard units of measurement. ● ▼	Demonstrate the use of measuring devices.
Using any customary U.S. or metric units, students will: ▪ *read measurements from illustrations of rulers, clocks (digital or analog) and thermometers* ▪ *calculate perimeter, area and volume from measurements given of sides of polygons and edges of rectangular solids*	*Using any common measurement unit or nonstandard unit of the student's devising, students will use diagrams or readings from illustrations of measuring devices to solve problems.*	

MEASUREMENT (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
INDIRECT METHODS			
Derive and use various methods including trigonometric ratios to measure geometric figures. Measure quantities indirectly using algebra, geometry or trigonometry. Develop and use formulas and procedures to solve problems involving measurement. Solve problems using measurement of two- and three-dimensional figures.	Apply indirect methods of measurement (e.g., formulas, estimates).	Estimate measurements of length and weight. ●	Make and use estimates of length, weight, capacity, angle, money and time. ●
		Students will estimate: ▪ *length in inches, feet, yards, centimeters or meters* ▪ *weight in pounds or kilograms.*	*Students will estimate:* ▪ *length, weight or capacity in any customary U.S. or metric units* ▪ *the measure of acute, right or obtuse angles in degrees* ▪ *the passage of time using a clock face.*

● Statewide Multiple-Choice Assessment
▼ Classroom Work Samples

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Use tools, scale drawings, models and formulas to estimate and calculate length, weight, angle, volume, distance, area, perimeter and speed. ●	Use formulas and other indirect measures (e.g., trigonometry, scale drawings) to calculate length, weight, angle, volume, distance, area, perimeter and temperature. ●	Derive and use various methods of indirect measurement including trigonometric ratios, scale drawings and scale models, and mathematical formulas.
Students will use common map scales and ratios to determine lengths and distances. *Students will apply, often in context:* ▪ *the Pythagorean Theorem* ▪ *perimeter formulas for polygons* ▪ *area formulas for triangles and quadrilaterals* ▪ *circumference and area formulas for circles* ▪ *volume formulas for right and rectangular solids* ▪ *formulas for finding the number of degrees for each interior angle of a regular polygon* ▪ *definitions of complimentary and supplementary angles.*	*Students will determine perimeter, area, surface area and volume of:* ▪ *any polygon* ▪ *circles* ▪ *rectangular solids* ▪ *pyramids* ▪ *cones* ▪ *cylinder* ▪ *spheres.* *Students will solve problems involving:* ▪ *right triangle trigonometry* ▪ *similar figures with corresponding parts in ratio.*	

STATISTICS AND PROBABILITY: Collect, organize, display, interpret and analyze facts, figures and other data.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
ORGANIZATION OF DATA Read, construct and interpret displays of data (e.g., charts, tables, graphs) using appropriate techniques and technologies. Formulate hypotheses, design and conduct experiments using appropriate technology, draw conclusions based on data and communicate results.	Create charts, tables, graphs and use statistics to summarize data, draw inferences and make predictions.	Collect, organize, display and describe simple data using number lines, bar graphs and line graphs. ● ▼ *Students will interpret data from horizontal or vertical bar graphs with five or fewer bars; and pictographs that represent ten or fewer data pieces.* *Data will be limited to:* ▪ *whole numbers through 200* ▪ *whole dollar amounts up to $100.*	Collect and analyze data to formulate and solve problems. ● ▼ Create and interpret displays summarizing collected data using number lines, bar graphs, line graphs, circle graphs, stem and leaf plots and histograms. ● ▼ *Students will read information directly from a display and compare two quantities from the same display.* *Data may be in the form of measurements of:* ▪ *time* ▪ *money* ▪ *physical measurements—height, weight, length, distance, etc.* ▪ *age* ▪ *quantity* ▪ *speed.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Create, interpret and analyze charts, tables and graphs to make conclusions. ● ▼	Create, analyze, draw inferences and make predictions from charts, tables and graphs summarizing data from real-world situations. ● ▼	Select the appropriate range for the examination and display of data, analyze claims, reports, and studies to judge the validity of conclusions.
	Use data analysis, such as curve fitting and population sampling, to evaluate hypotheses, predict and make statistical claims. ● ▼	Select and apply appropriate technology (e.g., computer application or graphic calculator) to display data in more than one way.
Students will read information directly from a display and also compare two quantities from the same display. *Data may include:* ▪ *weather data* ▪ *cost per unit measure* ▪ *length or distance, weight, volume* ▪ *production data* ▪ *cost or income over time.* *Displays may include:* ▪ *stem and leaf plots* ▪ *box and whisker plots* ▪ *scatter plots* ▪ *double bar graphs* ▪ *double line graphs* ▪ *circle graphs* ▪ *histograms.*	*Students will interpret and analyze data in these display forms:* ▪ *frequency distributions* ▪ *charts and tables* ▪ *stem and leaf plots* ▪ *bar graphs and histograms* ▪ *line graphs—linear and nonlinear* ▪ *circle graphs* ▪ *box and whisker plots.*	

MATHEMATICS

STATISTICS AND PROBABILITY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
PROBABILITY			
Generate, compare and analyze data to draw inferences and make predictions, using experimental and theoretical probability.	Determine the probability that an event will occur.	Use concepts of probability such as likely, unlikely and certain.●	Make predictions using experimental probability. ▼
Determine probabilities through experiments or simulations (e.g., counting to determine possible outcomes).			Express concepts of probability, including ratios. ●
Use experimental and theoretical probability to represent and solve problems. Solve problems using various strategies for making combinations and/or permutations.		*Students will determine probabilities using:* ▪ *coins* ▪ *dice* ▪ *spinners with up to six sections that may be either evenly or unevenly divided* ▪ *objects hidden in containers—up to 100 objects* ▪ *daily happenings such as a chance of rain.*	*Students will determine theoretical probabilities by calculating or counting the possible outcomes in a sample space, determining the number of these outcomes that fit the description of an event of interest, and then expressing the probability as a fraction or a ratio.* *Experiments performed or analyzed by the students will include:* ▪ *tossing one or more coins* ▪ *rolling one or more dice* ▪ *spinning a spinner of even or uneven divisions* ▪ *drawing objects from a container with and without replacement* ▪ *charting observed natural occurrences* ▪ *interpreting data from games or sports events.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

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Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Compare and make predictions using experimental and theoretical probability. ● ▼ Design and carry out probability experiments and simulations. ▼	Use experimental or theoretical probability to solve problems and determine the probability of an event. ●	Compare data to normal and "non-normal" distributions describing the probability of an event.
Students will: ▪ *make predictions for succeeding trials of an experiment given the outcome of preceding repeated trials* ▪ *make predictions by using the theoretical probability of an outcome* ▪ *compare probabilities with the actual occurrence of an outcome.* *Experiments performed or analyzed by the students will include:* ▪ *tossing one or more coins* ▪ *rolling one or more dice* ▪ *spinning a spinner of even or uneven divisions* ▪ *drawing objects from a container with and without replacement* ▪ *charting observed natural occurrences* ▪ *interpreting data from games or sports events.*	*Students will determine the probability of:* ▪ *dependent events* ▪ *independent events* ▪ *expected values.* *Experiments analyzed by the students will include:* ▪ *tossing one or more coins* ▪ *rolling one or more dice* ▪ *spinning a spinner of even or uneven divisions* ▪ *drawing objects with and without replacement* ▪ *charting observed natural occurrences* ▪ *interpreting data from games or sports events.*	

STATISTICS AND PROBABILITY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
STATISTICS			
Display and use measures of central tendency and variability (e.g., mean, median, mode, range, quartiles). Analyze data to determine strength of relationships between sets, draw conclusions and make predictions. Analyze and evaluate statistical claims and arguments for erroneous conclusions and/or distortions.	Carry out and describe experiments using appropriate statistics.	Carry out simple experiments and simulations and compare the predicted and actual outcomes. ▼	Formulate and solve problems that involve collecting and analyzing data. ● ▼ *Students will:* ▪ *determine mean, median and mode of ten or fewer numbers that are each no larger than 100* ▪ *find one missing data piece when the mean is known.*

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● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Make inferences and convincing arguments based on sample size and collected data. ● ▼	Design a statistical experiment to study a problem, using such things as normal distribution, simulation and modeling. Conduct the experiment, interpret and communicate the outcome. ● ▼	Design experiments to analyze and evaluate statistical claims and arguments. Conduct the experiment, interpret and communicate the outcome including erroneous conclusions and/or distortion.
Students will define, compute and determine appropriate use of the following statistics: ▪ *mean or "average"* ▪ *median* ▪ *mode* ▪ *range* ▪ *maximum and minimum values* ▪ *theoretical probability of the outcomes of the experiment.*	*Students will:* ▪ *compute frequency, mean (average), median, mode and range* ▪ *make predictions about populations based on reported sample statistics* ▪ *identify examples of populations that are normally distributed* ▪ *determine appropriate designs for simulations.*	

ALGEBRAIC RELATIONSHIPS: **Describe and determine generalizations through patterns and functions and represent in multiple ways.**

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
PATTERNS, FUNCTIONS AND OPERATIONS			
Create, extend and reproduce patterns, using a variety of materials. Use patterns and functions to describe (model) problems. Recognize and use patterns, functions and algebraic operations to solve problems. Use a variety of methods and tools to solve equations.	Use patterns, functions and algebraic operations to represent and solve problems.	Recognize, create, describe and extend numeric and geometric patterns. ● ▼	Recognize, create, describe and extend a wide variety of numeric and geometric patterns. ● ▼
		Students will: ▪ *identify an element that does not belong in a pattern* ▪ *supply an element that is missing from a pattern* ▪ *choose a written description that explains how to generate the pattern in a single step* ▪ *supply the next element in a given pattern* ▪ *reproduce a pattern in another format.* *Patterns could be generated in a variety of ways including:* ▪ *addition and subtraction* ▪ *multiples (less than one hundred) of the numbers two through nine* ▪ *monetary relationships with values under ten dollars* ▪ *relationships between the numerator and denominator of a fraction using common multiples* ▪ *divisions or arrangements of two-dimensional geometric figures* ▪ *examples of real-world events (e.g., season, cycles, architecture).*	*Students will:* ▪ *supply an element that is missing from a pattern* ▪ *identify an element that does not belong in a pattern* ▪ *choose a written description that explains how to generate the pattern in a single step* ▪ *reproduce a pattern in another format* ▪ *create a pattern that models an everyday event.* *Patterns could be generated in a variety of ways:* ▪ *addition, subtraction, multiplication and division of whole numbers* ▪ *addition of decimals to the hundredths* ▪ *relationships between the numerator and denominator of a fraction using common multiples or factors* ▪ *monetary relationships* ▪ *arrangements of two- or three-dimensional geometric figures* ▪ *relationships among component parts of geometric figures.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Describe, use, analyze and create patterns, functions and arithmetic and geometric sequences to represent and solve problems. ● ▼	Model situations and solve problems using linear and nonlinear functions and inequalities. ● ▼	Algebraically, numerically, and/or graphically represent and solve problems using systems of linear and nonlinear equations and inequalities.
Investigate and solve linear and nonlinear equations and inequalities, using concrete, formal and informal methods. ● ▼	Use recursive relationships and/or matrices to represent and solve problems. ● ▼	Use matrices to represent and solve systems of linear and nonlinear equations and perform geometric transformations to solve problems.
Students will investigate and solve linear and nonlinear equations and inequalities by: ▪ *coordinate graphing or number lines* ▪ *creating tables* ▪ *directly solving equations and inequalities* ▪ *identifying the nth term in simple linear relation* ▪ *using pictorial models.*	*Students will be asked questions that call for:* ▪ *solutions of single variable equations and inequalities* ▪ *graphs of one- and two-variable linear equations—slope and intercepts* ▪ *graphs of linear inequalities in both one and two dimension* ▪ *simple quadratics and their graphs (i.e., circles and parabolas)* ▪ *graphs of equations and inequalities that include absolute values* ▪ *definitions of function including domain and range* ▪ *solutions of two linear equations* ▪ *algebraic notations for both explicit and recursive formulas.*	

ALGEBRAIC RELATIONSHIPS (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
REPRESENTATIONS OF MATHEMATICAL RELATIONSHIPS			
Describe patterns and other relationships using tables, graphs and open sentences (e.g., variables, expressions, equations and inequalities). Observe, analyze and explain relationships (e.g., how a change in one quantity can produce a change in another).	Represent patterns and mathematical relationships, using symbols, graphs, numbers and words.	Represent and describe mathematical relationships, using words, symbols, pictures and/or manipulatives. ● ▼	Create and use tables, graphs and rules to represent and describe mathematical relationships. ● ▼ Use variables and open sentences to express algebraic relationships. ● Model how a change in one quantity can result in a change in another. ▼
		Students will be asked to work with problems that demonstrate a relationship between two quantities such as: ▪ *number of people who can be seated at a table and the number of tables needed* ▪ *measurement equivalencies.* *Students will be asked to:* ▪ *recognize patterns and supply missing elements in table format* ▪ *recognize a mathematical relationship in a word problem* ▪ *extend and/or generalize patterns to solve word problems* ▪ *supply missing addends and factors in equations.*	*Students will be asked to interpret:* ▪ *two-column tables* ▪ *bar graphs* ▪ *Cartesian graphs (first quadrant)* ▪ *number sentences* ▪ *written descriptions of the relationship.* *Emphasis is on simple, single-step relationships. Problems that are posed involve relationships with adding or multiplying whole numbers. Open sentences model single operations—addition, subtraction, multiplication and division of whole numbers.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Represent mathematical relationships using tables, graphs, patterns, generalizations and equations. ● ▼ Analyze relationships to explain how a change in one quantity results in a change in another. ● ▼	Represent and analyze discrete structures and continuous functions using tables, graphs, matrices, generalizations and equations. ● ▼ Solve equations using symbolic, graphic and numeric strategies. ● Translate among numeric, symbolic and graphic representations of functions (e.g., linear, exponential, polynomial, inverse, step and trigonometric). ●	Apply appropriate technology (e.g., graphic calculator or computer application) to define and model algebraic relationships in order to aid interpretation and solve problems. Algebraically, numerically, and/or graphically model specific families of functions and describe their attributes.
Students will interpret algebraic relationships represented by: ▪ *two-column tables* ▪ *number line or Cartesian graphs* ▪ *arithmetic or geometric sequences* ▪ *written descriptions* ▪ *equations or inequalities.* *Students will analyze changes in one quality due to changes in another quantity using:* ▪ *two-column tables* ▪ *bar graphs* ▪ *linear and nonlinear Cartesian graphs.* *All rational numbers and operations may be used in representing relationships. The full range of the number line will be employed. Two-dimensional graphs may be both standard four-quadrant Cartesian graphs or first quadrant graphs relating two quantities such as time and money.*	*Students will solve problems involving:* ▪ *numeric representations occurring as ordered pairs or in table form. Solution of this type of problem requires the student to analyze and extend the pattern* ▪ *symbolic representations including one- and two- variable equations and inequalities* ▪ *graphic representations including number lines and two-dimensional Cartesian systems.* *Students will be presented with linear, exponential or quadratic functions, or with other mathematical relations (any set of ordered pairs).*	

MATHEMATICS

GEOMETRY: Reason about geometric figures and properties and use models, coordinates and transformational geometry to solve problems.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
CONCEPTS AND PROPERTIES			
Identify, describe, draw, compare and classify physical models of geometric figures. Construct two- and three-dimensional models using a variety of materials and tools. Make and test conjectures about geometric shapes and their properties, incorporating technology where appropriate. Describe, analyze and reason about the properties of two- and three-dimensional figures.	Apply concepts and properties of geometric figures to solve problems.	Sort, classify and describe shapes. ● ▼ Use concrete experiences to visualize and represent two- and three-dimensional geometric figures. ● ▼ *Students will recognize, describe and provide real-world counterparts for:* ■ *line segments* ■ *angles—acute, right, obtuse* ■ *triangles* ■ *quadrilaterals—trapezoid, parallelogram, rectangle, rhombus, square* ■ *pentagons* ■ *hexagons* ■ *octagons* ■ *spheres* ■ *cubes.*	Construct, draw, measure and compare shapes. ● ▼ Visualize and represent two- and three-dimensional geometric figures. ● ▼ *Students will identify, measure and visualize geometric figures and their component parts, including:* ■ *points, lines, planes, line segments, rays* ■ *angles—acute, right, obtuse* ■ *circles—radius, chord, diameter* ■ *polygons—triangle, all quadrilaterals, pentagon, hexagon, octagon* ■ *three-dimensional solids—sphere, cylinder, pyramid, rectangular solid, cube* ■ *concepts of parallel and perpendicular*

NOTE: Most construction and drawing of geometric figures will be assessed in the student work sample.

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Identify, classify, draw and describe geometric figures. ● ▼ Visualize and represent geometric properties of two- and three-dimensional figures. ● ▼	Interpret, draw and describe two- and three-dimensional objects. ● ▼ Represent and solve problems applying geometric models and properties of figures (e.g., Pythagorean Theorem). ● ▼	Create and evaluate conjectures about geometric shapes and their properties, incorporating appropriate technology (e.g., graphic calculator or computer application).
Students will identify, measure and visualize geometric figures and their component parts, including: ▪ *points, lines, planes, rays, vertices, segments, faces* ▪ *properties of parallel and perpendicular* ▪ *angles—right, acute, obtuse* ▪ *polygons* ▪ *types of triangles—right, acute, obtuse, scalene, isosceles, equilateral* ▪ *features of circles—radius, chord, diameter, tangent line* ▪ *solids—sphere, cylinder, pyramid, prism.*	*Students will:* ▪ *name geometric figures and identify counterparts* ▪ *mentally visualize and then select two-dimensional objects created from lists of component parts or verbal descriptions* ▪ *make conjectures about hidden components of three-dimensional figures shown in a variety of positions* ▪ *mentally visualize and then select the actual three-dimensional figure presented in an "unfolded" format (net).* *Students will use properties of geometric figures to solve problems (e.g., vertical angles, transversals).* *Geometric figures may include:* ▪ *any common two- or three-dimensional geometric shape* ▪ *any component part of a two-or three-dimensional shape* ▪ *concepts of parallel, perpendicular and skew lines* ▪ *three-dimensional block constructions.*	

GEOMETRY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
RELATIONSHIPS			
Recognize geometric shapes and their properties and prove relationships between them. Relate geometric ideas to measurement and number sense. Find and analyze relationships among geometric figures using transformations (e.g., reflections, translations, rotations, dilations). Prove solutions using geometric relationships, spatial reasoning and coordinate geometry.	Using given assumptions, determine properties of geometric figures and prove or justify relationships between them.	Describe changes in shapes as they move through reflections and rotations. ● ▼ Identify properties of geometric figures and combinations of shapes. ● ▼	Identify and predict the effects of combining, dividing and changing shapes as in transformations (relations and reflections). ● ▼ Investigate and predict the results of geometric properties such as perimeter, area and volume when combining, dividing and changing shapes. ● ▼
		Students will mentally visualize: ▪ *three-dimensional shapes shown "unfolded" in two-dimensional representations* ▪ *folding of individual shapes to show symmetry.* *Students will identify properties of geometric figures by:* ▪ *determining which shape does not belong to a group of shapes* ▪ *indicating shapes that are identical in all properties* ▪ *recognizing similar shapes (those that maintain the same shape, but are different in size).* *Shapes that may be reflected, rotated or categorized include:* ▪ *line segments* ▪ *angles* ▪ *triangles* ▪ *quadrilaterals—trapezoid, parallelogram, rectangle, rhombus, square* ▪ *pentagons, hexagons, octagons* ▪ *circles, including location of the diameter and radius* ▪ *spheres* ▪ *cubes.* *In addition, students will identify:* ▪ *closed and not-closed figures* ▪ *concepts of inside and outside of a shape.*	*Students will identify congruence, similarity and symmetry of transformed figures.* *Geometric figures include:* ▪ *polygons of eight sides or less* ▪ *simple irregular shapes* ▪ *rectangular solids, spheres and cylinders.* *Transformational motions are:* ▪ *translation—slide* ▪ *rotation—turn* ▪ *reflection—flip* ▪ *dilation—shrinking or enlarging.* *Either formal or informal terminology may be used.*

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Using transformations, rotations, reflections and given assumptions, justify properties of geometric figures. ●	Using given assumptions, justify or generalize relationships between properties of figures. ●	Use given assumptions about geometric relationships, spatial reasoning, and coordinate geometry to solve problems.
Use coordinate geometry to solve problems. ●	Explore, deduce or prove characteristics of figures, using transformations, coordinates and/or other geometric properties. ● ▼	
Students will be asked about any of the following: ▪ *transformations (translation, rotation, reflection, dilation) with any geometric shape to prove congruence of two whole figures or their corresponding component parts* ▪ *location of points by coordinates* ▪ *locations on maps with alphabetic and numeric grid systems* ▪ *identification of line (reflection) and rotational symmetry of a figure.* *Geometric figures may include any polygons, simple irregular shapes, rectangular solids, spheres or cylinders.*	*Students will solve problems from any previous benchmark level. In addition, students will be asked about:* ▪ *Euclidean theorems and definitions related to parallel lines* ▪ *perpendicularity* ▪ *congruence of geometric figures and their corresponding parts* ▪ *similarity* ▪ *visualizing folding of two-dimensional figures, cutting the folded figure and predicting the changes to the original shape* ▪ *making conjectures and justifying geometric properties.*	

MATHEMATICAL PROBLEM SOLVING: Design, use and communicate a variety of mathematical strategies to solve problems.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
CONCEPTUAL UNDERSTANDING Identify problems. Select pertinent information from problems to solve them. Understand and evaluate multiple approaches to solve problems.	Identify problems and select information to solve them.	Use pictures, models, diagrams and symbols to show main mathematical concepts in the problem. ● ▼ Select and use relevant information in the problem to solve it. ● ▼	Use pictures, models, diagrams and symbols to show main mathematical concepts in the problem. ● ▼ Select and use relevant information in the problem to solve it. ● ▼
PROCESSES AND STRATEGIES Develop and apply problem-solving strategies accurately to solve problems and verify solutions. Make reasonable estimates.	Develop and apply problem-solving strategies accurately to solve problems and verify solutions.	Select and use mathematical strategies to solve problems. Review the process and strategy. ● ▼	Select and use mathematical strategies to solve problems. Review the process and strategy. ● ▼
COMMUNICATION Communicate solutions in an easily understood manner. Illustrate problem-solving strategies with relevant, clear sketches that enhance understanding. Make justified, logical statements.	Communicate solution process in an easily understood manner.	Present the problem's main idea clearly. ● ▼ Use appropriate mathematical terminology. ● ▼	Present the problem's main idea clearly with supporting details to show reasoning. ● ▼ Use appropriate mathematical terminology. ● ▼

● Statewide Multiple-Choice Assessment

▼ Classroom Work Samples

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GRADE 8 **BENCHMARK**	**CIM/GRADE 10** **BENCHMARK**	**CAM/GRADE 12** **BENCHMARK**
Use pictures, models, diagrams and symbols to show main mathematical concepts in the problem. ● ▼ Select and use relevant information in the problem to solve it. ● ▼	Use pictures, models, diagrams and symbols to show main mathematical concepts in the problem. ● ▼ Select and use relevant information in the problem to solve it. ● ▼	Identify and formulate a problem within a context.
Select and use appropriate mathematical strategies. Apply graphic and/or numeric models to solve the problem. Review the process and strategy. ● ▼	Select and complete appropriate mathematical strategies. Apply graphic, numeric and/or abstract models to solve the problem. Review the process and strategy. ● ▼	Select and apply appropriate algorithms and/or strategies to solve real-world problems.
Present the work in an organized manner with clear reasoning applicable to the problem. ● ▼ Use appropriate mathematical terminology. ● ▼	Present the work in an organized manner with clear reasoning applicable to the problem. ● ▼ Use appropriate mathematical terminology. ● ▼	Demonstrate the ability to organize and communicate a solution in narrative and/or visual form.

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MATHEMATICAL PROBLEM SOLVING (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
INTERPRET REASONABLENESS			
Generalize solutions and strategies to new problem situations. Review and verify solutions to prove their accuracy and reasonableness.	Review solutions to see if they are accurate and reasonable.	Accurately compute and/or apply models to solve problems. ● ▼ Review the work and support the reasonableness of the results. ● ▼	Accurately compute and/or apply models to solve problems. ● ▼ Review the work and support the reasonableness of the results. ● ▼

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▼ Classroom Work Samples

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Accurately compute and/or apply models to solve problems. ● ▼	Accurately compute and/or apply models to solve problems. ● ▼	Accurately compute and/or apply models to solve problems.
Review the work and support the reasonableness of the results. ● ▼	Review the work and support the reasonableness of the results. ● ▼	Demonstrate when a problem has no solution or multiple solutions.
		Determine the reasonableness of the solution(s).

CONTENT STANDARDS

FOR

SCIENCE

Science is the rational and systematic observation, identification, description, experimental investigation and theoretical explanation of natural events. The interrelated areas of scientific study attempt to answer questions about the physical and living world.

UNIFYING CONCEPTS AND PROCESSES: Understand and apply major concepts and processes common to all sciences.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception and fundamental entities. Apply explanatory concepts of model, system, theory, probability, and replication. Apply comparison concepts of gradient, scale, symmetry, quantification and invariance. Apply relationship concepts of population, equilibrium, force, interaction, field, structure and function, time and space, and order. Use basic scientific process skills to observe, measure, use numbers, classify, question, infer, hypothesize and communicate. Use integrated scientific process skills to predict, design experiments, control variables, interpret data, define operations and formulate models.	Use concepts and processes of change, constancy and measurement.	Identify examples of change.	Describe and explain different rates of change. *Students will:* ▪ *identify and describe evidence of surface changes on Earth, such as soil washing away, sidewalks breaking, and sand or dust being blown by the wind.* ▪ *distinguish between short-term changes in weather, longer-term changes in seasons, and evidence of very long-term changes in climate.* ▪ *distinguish between faster chemical changes such as burning and slower changes such as rusting.* ▪ *identify apparent changes in the position of objects in the sky, from the fast change of the Sun moving across the sky to the slower changes of the position of the Sun in different seasons.* ▪ *assess the changes people make in their environment, such as by comparing natural areas with developed areas.* ▪ *compare the rate of change in different organisms. For example, the rate of change in animals is slower in adulthood than in childhood.*
		Arrange parts of a cycle.	Diagram and explain a cycle. *Students will:* ▪ *describe, compare and contrast life cycles in common organisms such as humans, insects, amphibians, flowering plants, etc.* ▪ *recognize birth, growth, maturation, reproduction, aging and death as normal parts of the life cycle of living things.* ▪ *understand that water goes into the air and comes out of the air; this is the basis of the water cycle.* ▪ *recognize the difference between a cycle and a trend.*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Identify and explain patterns of change in cycles and trends.	Apply the laws of conservation to examples of change.	At grade 12, application of unifying concepts and processes occurs within the specific content areas of life, physical and earth sciences.
Students will: ▪ *understand that there are many kinds of cycles, operating on time scales from less than a billionth of a second (e.g., wave period of X-rays) to millions of years (e.g., Sun orbiting center of the Milky Way).* ▪ *explain common cycles in Earth systems such as tides, movements of celestial objects, predator-prey populations, life cycles, the water cycle, the rock cycle, etc.* ▪ *understand that cycles can be described in terms of cycle length or frequency, what the highest and lowest values are, and when they occur.* ▪ *recognize cyclic patterns in data and distinguish them from patterns showing trends.*	*Students will:* ▪ *explain the principle that energy can be transferred and matter can be changed, but the sum of energy and matter in systems, and therefore in the universe, remains the same.* ▪ *apply the law of conservation of mass to analyze chemical reactions. For example, a change in measured mass before and after a chemical reaction can reveal how much gas was given off or how much oxygen may be drawn from the air when a metal oxidizes.* ▪ *apply the law of conservation of energy to analyze energy transformed from one form to another, for example, transformation of kinetic energy of a moving object into thermal energy when the object is slowed or stopped by friction or impact.*	

SCIENCE

UNIFYING CONCEPTS AND PROCESSES (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception and fundamental entities. Apply explanatory concepts of model, system, theory, probability, and replication. Apply comparison concepts of gradient, scale, symmetry, quantification and invariance. Apply relationship concepts of population, equilibrium, force, interaction, field, structure and function, time and space, and order. Use basic scientific process skills to observe, measure, use numbers, classify, question, infer, hypothesize and communicate. Use integrated scientific process skills to predict, design experiments, control variables, interpret data, define operations and formulate models.	Use concepts and processes of systems, order and organization.	Classify a set of objects based upon specific characteristics.	Recognize and diagram the parts of a system. Identify interactions among those parts. *Students will:* ■ *describe the relationships among organisms in food chains and simple food webs.* ■ *explain the function of various parts of simple physical systems, such as in an electrical circuit using batteries and bulbs.* ■ *describe the relationship between the parts of the solar system, the place of Earth in that system and the limits of that system.* ■ *understand that local weather is a result of changes in large-scale weather systems.* ■ *apply the concept that humans are part of a larger system of living things.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Identify a system's inputs and outputs. Explain the effects of changing the system's components.	Analyze feedback mechanisms in systems.	
Students will: ▪ *apply the concept that system means a set of parts that function together as a whole.* ▪ *understand that any system is usually connected to other systems, thus becoming a subset of a larger system. A change in one system may cause a change in other systems.* ▪ *analyze a variety of systems in terms of inputs and outputs.* ▪ *analyze the effect on a variety of different systems if one of the system's components is changed.* ▪ *recognize that energy is often an input or an output in a system, and analyze the effect on the system of changing the amount of energy coming in or going out.* ▪ *predict the effect of changing a component of a simple system such as a food web.* ▪ *recognize that in complex systems, it is often impossible to predict the effect of changing one component of the system.*	*Students will:* ▪ *explain the role of feedback in humans and other organisms to maintain equilibrium in many areas, such as maintaining physical balance, body temperature, and levels of oxygen, glucose and other chemicals in the blood.* ▪ *analyze the role and nature of feedback systems that maintain populations of various members of ecosystems within certain ranges.* ▪ *describe examples of excessive feedback in systems (e.g., predators reducing the populations of prey to zero).* ▪ *analyze the role and nature of human-designed feedback mechanisms such as thermostats in heating and cooling systems, cruise controls in automobiles, etc.*	

UNIFYING CONCEPTS AND PROCESSES (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception and fundamental entities. Apply explanatory concepts of model, system, theory, probability, and replication. Apply comparison concepts of gradient, scale, symmetry, quantification and invariance. Apply relationship concepts of population, equilibrium, force, interaction, field, structure and function, time and space, and order. Use basic scientific process skills to observe, measure, use numbers, classify, question, infer, hypothesize and communicate. Use integrated scientific process skills to predict, design experiments, control variables, interpret data, define operations and formulate models.	Use concepts and processes of evidence, models and explanation.	Compare objects, drawings and constructions to the real things they represent.	Use models to explain how objects, events and/or processes work in the real world. *Students will:* ▪ *use physical models to explain such phenomena as the solar system or surface features of Earth, continents, river systems and their neighborhood.* ▪ *use pictorial models to explain relationships within systems such as food chains, food webs, chains of events and their community.* ▪ *understand that geometric figures, number sequences, graphs, diagrams, sketches, number lines, maps and stories can be used to represent objects, events and processes in the real world, but such representations cannot usually be exact in detail.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Use a model to make predictions and inferences about familiar and unfamiliar phenomena in the natural world.	Use conceptual and/or mathematical models to explain natural systems.	
Students will: ■ *recognize that many of the concepts they study in science are portrayed in the form of models. These include drawings depicting cycles, food chains and food webs, parts of cells, organs, organ systems, systems for classifying organisms, heredity charts, forces acting on objects, technological devices and systems, the motion of gas molecules, light passing through lenses, electrical circuits, magnetic lines of force, nuclear fission and fusion, models of the atom, models of the parts of the Earth, the geologic timetable, among many others.* ■ *analyze models such as those listed above to make predictions about future events in the natural world.* ■ *use models such as those listed above to make inferences about objects, organisms and events in the natural and human-made world.*	*Students will:* ■ *compare and contrast scale models, conceptual models and mathematical models.* ■ *use mathematical models to analyze the events and relationships in a system. For example, RI (radiation in) - RO (radiation out) = amount of energy available for temperature change in the global system.* ■ *use conceptual models to predict natural events. For example, students could use the periodic chart of the elements to predict the chemical properties of elements at various locations in the chart.* ■ *evaluate models as to their accurate portrayals of reality and their usefulness for a particular purpose.* ■ *use conceptual models and simple mathematical models for specific purposes.*	

SCIENCE

UNIFYING CONCEPTS AND PROCESSES (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception and fundamental entities. Apply explanatory concepts of model, system, theory, probability, and replication. Apply comparison concepts of gradient, scale, symmetry, quantification and invariance. Apply relationship concepts of population, equilibrium, force, interaction, field, structure and function, time and space, and order. Use basic scientific process skills to observe, measure, use numbers, classify, question, infer, hypothesize and communicate. Use integrated scientific process skills to predict, design experiments, control variables, interpret data, define operations and formulate models.	Use concepts and processes of evolution and equilibrium.	Identify examples of change over time.	Describe cause and effect relationships in biological and physical systems. *Students will:* ▪ *explain how changes in the environment can be beneficial to some kinds of organisms and detrimental to others.* ▪ *predict how seasonal weather changes affect living and non-living things.* ▪ *understand that changes in the appearance of objects in the sky such as the Sun and the Moon are caused by the motion of these objects.* ▪ *explain results of classroom experiments in terms of cause and effect.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Evaluate evidence of physical and biological changes over time.	Analyze how physical, biological or geological systems maintain equilibrium.	
Students will: ▪ *analyze diagrams of rock layers to determine the order in which they were deposited.* ▪ *explain how the layers in which fossils have been found indicate their relative age.* ▪ *find and interpret correlation between geological and biological timetables and changes using the evidence of fossil remains.* ▪ *understand how characteristics of modern animals, such as the relationship of bone structure to muscle size and function, are used to develop inferences about animals that lived long ago.* ▪ *compare the shape of coastlines of continents and other evidence to infer the movement of crustal plates.* ▪ *relate modern occurrences such as earthquakes, volcanoes, continental movement detected by satellites, and floods to historical evidence of how Earth has changed.* ▪ *compare and contrast the results of selective breeding on domestic plants and animals with changes resulting from natural selection.*	*Students will:* ▪ *explain the forces that maintain geographic features. For example, continental blocks continue to exist even though portions of those blocks rise, fall and are constantly eroding away to the sea.* ▪ *analyze processes that maintain physical profiles even though the material move in and out of those profiles. For example, analyze the processes that keep the bottom of most oceans cold even though the cold water gradually warms and rises to the surface.* ▪ *explain how some conditions remain the same even though physical changes are occurring. For example, the temperature of a pan of boiling water stays the same throughout the boiling period regardless of the amount of water in the pan or the rate at which heat is applied to the pan.* ▪ *explain the role of organs and tissue in the human body in maintaining equilibrium. For example, the loss of oxygen in the blood due to increased exercise in turn causes increases in the heart and breathing rate to replace the oxygen.* ▪ *explain the joint function of the nervous system and the sensory systems that gather information from the environment and produce impulses which regulate many body functions.*	

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UNIFYING CONCEPTS AND PROCESSES (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception and fundamental entities. Apply explanatory concepts of model, system, theory, probability, and replication. Apply comparison concepts of gradient, scale, symmetry, quantification and invariance. Apply relationship concepts of population, equilibrium, force, interaction, field, structure and function, time and space, and order. Use basic scientific process skills to observe, measure, use numbers, classify, question, infer, hypothesize and communicate. Use integrated scientific process skills to predict, design experiments, control variables, interpret data, define operations and formulate models.	Use concepts and processes of structure and function.	Identify structures that serve different functions.	Describe physical and biological examples of how structure relates to function. *Students will:* ▪ *identify particular structures in animals with the function they serve. For example, webbed feet perform the function of paddling through the water.* ▪ *relate structures in plants to their functions. For example, tree trunks are solid and strong, and this enables them to provide support for the tree.* ▪ *describe how the design of technological devices is related to the function of those devices. For example, cars are shaped aerodynamically so they will move easily through the air.* ▪ *identify characteristics of natural structures which lend themselves to human use. For example, wide, deep slow-moving rivers are ideal for ship traffic.* 84

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Compare and contrast structures and functions in physical and biological examples.	Analyze structure and function at various levels of organization (cellular, organism, system, etc.)	
Students will: ▪ *compare and contrast the different structures in different organisms that serve the same function. For example, vascular tissue in plants serves a function of material transport somewhat similar to the function played by the circulatory system in animals.* ▪ *identify differences among structures in organisms that arise from special adaptations. For example, the bones of birds are hollow, thus making flight possible.* ▪ *compare and contrast the structures in machines designed for different functions, for example, the difference between trail bikes and racing bikes.* ▪ *compare kinds of functions necessary for organisms that are adapted to a particular type of ecological niche. For example, predators of many kinds rely on swift movements and highly developed sensory systems.*	*Students will:* ▪ *explain the relationship between structure and function at the cell level. Examples might include structures in the cell membrane that control movement into and out of the cell, the nucleus that controls cell activities, chloroplasts that make food in green plants, and specialized cells such as nerve cells and blood cells that carry out specific functions made possible by their particular structures.* ▪ *explain the relationship between structure and function in organs. For example, the chambers, valves and muscle tissue in the heart serve specific functions and together serve the function of pumping blood.* ▪ *explain the relationship between structure and function in systems. For example, each organ in the digestive system plays a particular function by virtue of its structure. Together, their overall structure serves the function of processing food so that it can be used by the rest of the body.* ▪ *analyze the relationship of structure to function of whole organisms. For example, in an ecosystem, plants produce food, plant eaters have specialized structures for chewing and digesting plant material, and predators have specialized structures for capturing, chewing and digesting their prey.*	

PHYSICAL SCIENCE: Understand structures and properties of matter and changes that occur in the physical world.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
MATTER			
Understand structure and properties of matter.	Identify structures and properties of matter.	Describe objects according to their physical properties.	Identify substances as they exist in different states of matter. *Students will:* - *distinguish among solids, liquids and gases.* - *identify unique properties of each state of matter.* - *determine whether an unidentified substance is a solid, liquid or gas by analyzing its properties.* - *give examples of or identify each state of matter alone and in combinations, such as solids with liquids in them.* - *compare, order, classify and measure solid objects according to size, shape, composition, texture and other properties shared by all solid objects.* - *observe, compare and measure such properties of liquids as volume, temperature, odor, "feel" and color.* - *recognize that gases occupy space and can expand or condense to fit into the space available.*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Compare and contrast the physical and chemical properties of specific substances.	Describe and explain properties of elements and their relationship to the periodic table.	Analyze the interactions of molecules and their relationship to the physical properties of compounds.
Students will: ■ *recognize that substances may be grouped by their physical or chemical properties. Metals is an example of such a group.* ■ *determine how to separate a mixture of substances into the original substances by filtering, boiling or using magnets.* ■ *use the concepts of density and buoyancy to predict which objects will float or sink in water.* ■ *read and interpret charts and graphs for physical and chemical properties.* ■ *describe how to determine physical properties in simple laboratory experiments. For example, students can determine the relationship between mass and volume and their effect on density.*	*Students will:* ■ *identify atoms and their base components (protons, neutrons and electrons) as a basis for all matter.* ■ *read and interpret the periodic table including element symbols (H, Cl, Ne ...), atomic numbers of an element (number of protons) and atomic mass number (total number of protons and neutrons).* ■ *explain the difference between elements and compounds.* ■ *explain why some elements such as helium and neon are less likely to combine with other elements.* ■ *determine the ratio in which certain elements are likely to combine with certain other elements by counting the number of electrons transferred or shared.* ■ *describe the basic chemical properties of elements in a particular column of the periodic table. For example, elements in column 8 are chemically inert gases.*	

PHYSICAL SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
MATTER (continued)			
Understand chemical and physical changes.	Describe chemical and physical changes.		Describe the ability of matter to change state by heating and cooling. *Students will:* ▪ *infer that heating and cooling cause changes in properties of matter.* ▪ *explain how transformations among solids, liquids and gases occur.* ▪ *describe the conditions that affect changes in the state of matter, such as freezing point and boiling point.* ▪ *identify and explain changes in states of matter that they may see in their environment (e.g., puddles disappearing on a warm day, mirrors fogging up).* ▪ *identify or give examples of the interchangeability of the states of matter, such as liquid water, water vapor, clouds, fog, snow, etc.*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Explain common chemical reactions.	Analyze the effects of various factors on chemical reactions.	Analyze and explain the atomic and molecular changes in chemical reactions.
Students will: ▪ *understand that two or more elements can combine to make a compound. For example, the elements hydrogen and oxygen combine to make the compound water.* ▪ *recognize that substances that react in the same way may be grouped or categorized. Metals is an example of such a group.* ▪ *describe, in simple terms, chemical reactions such as burning, rusting, baking soda reacting with vinegar, and saliva changing starches to sugar.* ▪ *be aware that no matter how many substances combine or break apart in a chemical reaction, the total weight remains the same. This is known as conservation of matter.*	*Students will:* ▪ *understand that reaction rates depend on how often the reacting atoms and molecules encounter one another.* ▪ *describe ways in which chemical reactions can be speeded up such as by heating, stirring solutions, increasing the concentration of reactants in a solution, increasing the surface area of solids or increasing pressure on gases.* ▪ *explain the role that catalysts (for example, metal surfaces in a catalytic converter or enzymes in living systems) play in accelerating chemical reactions.*	
Compare physical and chemical changes.	Describe and explain chemical reactions using chemical symbols.	
Students will: ▪ *distinguish between examples of chemical changes and physical changes.* ▪ *recognize that physical changes do not alter the basic properties of substances, while chemical changes produce new substances with new properties.* ▪ *distinguish between mixtures and compounds.* ▪ *describe processes that will separate the components of physical mixtures, but will not separate the components of compounds.* ▪ *describe events that accompany chemical changes, but not physical changes, such as production of heat, precipitates or color changes.*	*Students will:* ▪ *read, analyze and balance a chemical equation.* ▪ *recognize the total number of atoms within an equation for a particular substance, for example, the number of atoms of oxygen in* $6CO_2 = 12$. ▪ *determine the masses of reactants and products in a reaction by using atomic mass units.* ▪ *know what ions are, how they are symbolized and how they are involved in reactions.* ▪ *describe the sharing of electrons that occurs in chemical reactions.* ▪ *recognize that energy can be absorbed or given off in chemical reactions.* ▪ *recognize and adhere to the principle of conservation of matter when balancing chemical equations.*	

PHYSICAL SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
FORCE AND MOTION			
Understand fundamental forces, their forms and effects on motion.	Describe electrical, magnetic, gravitational and other forces and the motions resulting from them.	Describe an object's position and how to affect its movement.	Identify examples of magnetism and gravity exerting force on an object. *Students will:* - *determine whether or not a magnet will attract a certain substance.* - *indicate from a diagram whether a magnet will push or pull on another magnet.* - *define the properties of a material that would cause it to be affected by magnets, gravity or both.* - *compare the strength of magnets based on the size of object whey will pick up.* - *explain why compasses point north.* - *describe the role of gravity in common phenomena such as flowing streams, tides, wind friction of bicycle tires on the pavement and orbiting satellites.* Describe and compare the motion of objects. *Students will:* - *predict and explain which way an object will move based upon its mass, composition and the force exerted upon it.* - *describe an object's motion by tracing and measuring its position over time.* - *explain simple changes in the motion of an object, such as the acceleration of objects moving downhill, the slowing of objects due to friction and the curving of the path of a thrown object or a satellite.* - *recognize that sound is produced by vibrating objects and that pitch of the sound varies by changing the rate of vibration.* - *draw a correlation between gravity and mass of an object – i.e., the greater the mass, the greater the gravitational pull. (See also Grade 5 Force and Motion Benchmark 1: Identify examples of magnetism and gravity exerting force on an object).*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Explain interactions between force and matter and relationships among force, mass and motion. *Students will:* ■ *predict the motion of an object based upon one or more forces acting on it.* ■ *predict ways to change direction or speed of an object by changing the forces acting upon it. For example, if we change a skateboarding surface from smooth to rough, the skateboard will decrease in speed across the surface.* ■ *compare weight, density and buoyancy forces to determine how to keep a ship floating.* ■ *identify real-world examples of forces affecting the motion of objects.* ■ *apply the principle that moving objects with no forces acting on them continue to move at the same speed and in the same direction.* ■ *recognize how force, mass and acceleration are related. For example, when a grocery cart is pushed, it moves. How fast it moves depends on the force of the push and the weight of the contents of the cart.* ■ *choose the most functional technological design for something such as an airplane, incorporating the concepts of drag, thrust, gravity and speed.*	Describe and explain the effects of multiple forces acting on an object. *Students will:* ■ *understand and apply the relationship* $F + ma$ *in situations in which one force acts on an object.* ■ *describe how equal and opposite reactions occur when one object exerts a force on another.* ■ *infer the nature of the forces acting on an object, based on the motion of that object.* ■ *explain orbital motion and the forces and motions that produce it.* ■ *describe the factors that affect the magnitude and direction of electrical, magnetic and gravitational forces.*	Analyze the forces and motions of moving objects and simple machines.

PHYSICAL SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
ENERGY			
Understand the interactions of energy and matter.	Explain the interaction of energy and matter.	Identify common forms of energy.	Identify forms and behaviors of various types of energy. *Students will:* ▪ *differentiate among the various forms of energy: heat, light, sound and electricity.* ▪ *understand and use common terms such as friction and conduction in relation to forms of energy.* ▪ *identify the effects that various forms of energy have on matter, such as producing light, motion, sound, warmth and change of state.* ▪ *recognize the factors affecting the behavior of electricity and its path of flow through a circuit.* ▪ *indicate that the path of light is always in a straight line, but can be reflected, refracted or absorbed.* ▪ *trace fossil fuels as an energy source back to the light and heat from the Sun. (See also Grade 5 Energy Benchmark 2: describe examples of energy transfer.)* Describe examples of energy transfer. *Students will:* ▪ *predict which way heat will transfer (flow) when presented with a diagram of objects at different temperatures.* ▪ *predict which materials will conduct heat more efficiently and which materials can be used to prevent heat loss or heat gain.* ▪ *understand that heat is produced in many ways, such as from light, burning, electricity, friction and as a by-product of mechanical and electrical machines.* ▪ *identify examples of energy transfer in students' own lives and environment.* ▪ *trace the energy derived from fossil fuels back to the light and heat energy from the Sun. (See also Grade 5 Energy Benchmark 1: Identify forms and behaviors of various types of energy.)*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Compare and contrast forms and behaviors of various types of energy. *Students will:* ▪ *distinguish among chemical, heat light, electrical, sound and mechanical energy.* ▪ *associate unique properties with each of the various types of energy. For example, metals conduct electricity, while wood does not.* ▪ *predict which way heat energy will flow in a system.* ▪ *use diagrams to make predictions about the flow of electricity in a circuit.*	Describe waves (e.g., sound, seismic, electromagnetic) as a means of transmitting energy. *Students will:* ▪ *interpret a chart of the electromagnetic spectrum which includes information on the following wave types: radio, infrared, ultraviolet, gamma, beta, X-ray, visible, microwave, AM, TV, FM, radar, etc.* ▪ *identify the following characteristics of a wave from a chart or diagram: amplitude, frequency, wavelength, and energy level.* ▪ *describe various ways that electromagnetic radiation can be harmful and beneficial.* ▪ *understand that waves of all kinds have energy that can be transferred when the waves interact with matter.* ▪ *describe the interaction of waves with matter, for example, UV light causing a sunburn or sunlight warming the pavement.* ▪ *apply the relationships of frequency, wavelength and amplitude to analyze wave phenomena.* ▪ *recognize that electromagnetic waves exhibit wave and particle characteristics.* ▪ *explain the use of waves to gather information from nature, such as seismographic waves, spectral analysis, red shift and infrared sensing.*	Describe and explain how electromagnetic waves are used.
Describe and explain a variety of energy transfers and transformations. *Students will:* ▪ *recognize the reactants and products in basic energy transformations such as photosynthesis and digestion.* ▪ *recognize the difference between kinetic and potential energy.* ▪ *recognize the difference between chemical and mechanical energy.* ▪ *recognize that heat energy is almost always a by-product of energy transformations.* ▪ *analyze the flow of energy in a system from one point to another, and from one form to another.* ▪ *apply the principle that energy is conserved, neither created nor destroyed.*	Describe and analyze examples of conservation of energy. *Students will:* ▪ *identify various ways in which energy can be transferred, including chemical reactions, nuclear reactions, light waves, etc.* ▪ *differentiate between potential and kinetic energy.* ▪ *analyze the flow of energy through a system by applying the law of conservation of energy.* ▪ *apply the law of conservation of energy to account for energy lost from a system.* ▪ *apply the principle that in all energy transfers, the overall effect is that the energy is spread out more uniformly. For example, heat energy flows from hot objects to cool objects.*	Apply the laws of conservation of energy to describe the dynamics of a system.

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SCIENCE

LIFE SCIENCE: Understand structure, functions and interactions of living organisms and the environment.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
ORGANISMS			
Understand the characteristics, structure and functions of organisms.	Describe the characteristics, structure and functions of organisms.	Classify organisms based on a variety of characteristics.	Describe basic plant and animal structures and their functions.
			Students will: ■ *associate specific structures with their functions in the survival of the organism. For example, the colorful petals of a flower serve to attract insects, which aid in the reproduction of the plant.* ■ *correlate specific basic sensory needs with their associated structures. For example, animals may sense danger through their eyes, ears or nose.* ■ *draw comparisons between structures that are functionally equivalent in plants and animals. For example, the root system in plants and the circulatory system in animals both serve the function of transporting nutrients to the organism.*
			Describe the basic needs of living things.
			Students will: ■ *distinguish between basic and nonessential needs of an organism.* ■ *describe how a plant or animal grows when its needs are met.* ■ *predict the outcome for an organism moved from one environment to another, for example, moving a plant from the tropical rain forest to the desert.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Describe and explain the structure and functions of an organism in terms of cells, tissues and organs.	Describe, explain and compare the structure and functions of cells in organisms.	Compare and contrast ways in which selected cells are specialized to carry out particular life functions.
Students will: ▪ *identify differences and similarities between plant and animal cells.* ▪ *draw analogies between the functions of cell structures and the functions of organs in a complex organism.* ▪ *recognize how structural differences among organisms (at both the cellular and organ level) are related to their habitat and life requirements.* ▪ *draw comparisons between common structures in plants and animals or between two animals.*	*Students will:* ▪ *identify unique structures in cells from each of five kingdoms. For example, plant cells have cell walls and chloroplasts; prokaryotes lack a nucleus; some fungi have cross walls called septa and their cells lack chloroplasts.* ▪ *identify cell organelles and explain how they help a particular cell carry out its life functions.* ▪ *explain the role of the cell membrane during cell transport. Distinguish between active and passive transport, including diffusion and osmosis, explaining the mechanics of each. Relate these to the circulatory, digestive and excretory systems of an organism.*	
Describe and explain the relationship and interactions of organ systems.		
Students will: ▪ *find a correlation between plant and animal organ systems and describe the varied functions of each system.* ▪ *classify organs by the system to which they belong.* ▪ *explain how an organ's specialized structures and tissues help accomplish a particular function. Examples of this structure/function relationship might include gill structure and diffusion of gases; root structure and capillary action; and human body systems and defense against disease.* ▪ *identify organ systems at work during a particular activity and describe their effect on each other. For example, explain how running increases the activity of the circulatory, respiratory, muscular, skeletal and nervous systems but decreases activity in the digestive system.*		

SCIENCE

LIFE SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
HEREDITY			
Understand the transmission of traits in living things.	Describe the transmission of traits in living things.		Describe the life cycle of an organism. *Students will:* - *identify, from a series of drawings, the life cycle of common organisms such as seed plants, butterflies or frogs.* - *identify the stages of metamorphosis and various larval forms.* - *draw a correlation between similar stages in a life cycle of two kinds of animals or an animal and a plant.* - *distinguish between characteristics that have been inherited and those that have been acquired later.* - *recognize that new organisms are produced by living organisms of similar kind, and do not appear spontaneously from inanimate materials.*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Describe how the traits of an organism are passed from generation to generation.	Analyze the structure and function of DNA and its role in information transfer from one generation to the next, including laws of heredity.	Identify and describe the chemical properties of DNA and their role in the transmission of traits.
Students will: ▪ *distinguish between asexual and sexual reproduction.* ▪ *identify traits which are inherited and those which are acquired through interaction with the environment.* ▪ *use simple laws of probability to predict patterns of heredity. Demonstrate knowledge of concepts of single gene for single trait; probability outcomes regarding coin tosses and monohybrid crosses.* ▪ *explain, in simple terms, the mechanisms by which chromosomes carry genes from parent to offspring during asexual and sexual reproduction. Recognize that genes carry the traits that will be observed in the offspring.*	*Students will:* ▪ *recognize DNA as a double helix structure that forms long chains—each chain unique to a chromosome.* ▪ *recognize and understand the differences between meiosis and mitosis in cellular reproduction; differentiate between diploid body cells with 2n chromosomes and haploid egg and sperm cells with 1n chromosomes each.* ▪ *predict the probability of a trait being passed from one generation to the next using probability tools such as punnett squares for two-factor (dihybrid) crosses.* ▪ *apply concepts of inheritance of traits to determine the relatedness of two organisms such as in blood typing.* ▪ *interpret genetic data presented in pedigrees or karyotypes.* ▪ *recognize causes and consequences of chromosomal anomalies, for example, nondisjunction causes trisomy 21, or Down's syndrome.*	

LIFE SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
DIVERSITY/ INTERDEPENDENCE			
Understand the relationships among living things and between living things and their environments.	Explain the behavior and interdependence of organisms in their natural environment.	Describe a habitat and the organisms that live there.	Describe the relationship between characteristics of specific habitats and the organisms that live there. *Students will:* ▪ *draw a series of food chains for specific habitats.* ▪ *identify the producers, consumers and decomposers and predator-prey relationships in a given habitat.* ▪ *explain if and why each of the living and nonliving elements present within a closed environment (such as an aquarium) is needed. For example, rocks are needed for shelter and plants provide oxygen for fish.* ▪ *recognize how all animals depend upon plants whether or not they eat the plants directly.* ▪ *identify the living and nonliving resources unique to a specific habitat and the adaptations of organisms to that habitat. For example, the desert habitat has sun and dry sandy soil (nonliving resources) that the cactus has adapted to by developing thick skin and shallow roots to gather and conserve water.* ▪ *describe how animal behavior can improve the chance of survival. Examples might include mutually beneficial relationships such as ramoras cleaning the parasites from fish gills; communication such as scent to mark territory or warning calls by birds; social behaviors in insects, birds and mammals.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Identify and describe the factors that influence or change the balance of populations in their environment.	Describe and analyze the effect of human activity on an ecosystem.	Examine and evaluate theories of extinction.
Students will: ▪ *identify energy sources within a food web and determine how energy is passed through the ecosystem. For example, producers transfer sunlight into chemical energy through photosynthesis.* ▪ *predict how the balance of biotic and abiotic resources will change with the introduction of a new element within an ecosystem. For example, factors such as increased number of predators and climate changes can limit the growth of certain species within the ecosystem.* ▪ *identify populations of organisms within an ecosystem by the function that they serve, i.e., producer, consumer or decomposer, and how they interact.* ▪ *understand and differentiate between relationships among organisms including predator-prey, parasitism, mutualism and communalism.* ▪ *relate the importance of niche to an organism's ability to avoid direct competition for resources. Examples might include that butterflies have a longer proboscis than bees so they can feed on nectar from the same flowers as bees without directly competing with them; different grassland animals come to the plains at different times of the year to eat grasses of a preferred length; and so on.*	*Students will:* ▪ *predict outcomes of changes in resources and energy flow in an ecosystem.* ▪ *explain how humans modify ecosystems as a result of population growth, technology and consumption, and destroy others through activities such as pollution and atmospheric changes.* ▪ *describe the potential impact of human-caused changes on an existing ecosystem, and explain how environmental management can be used to minimize damage to the ecosystem.*	

LIFE SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
DIVERSITY/ INDEPENDENCE (continued)	Describe the principles of natural selection and adaptation.	Identify how some animals gather and store food, defend themselves and find shelter.	Describe how adaptations help an organism survive in its environment. *Students will:* - *identify how an organism's fur, color, shape, size, etc., adapt to its specific environment.* - *identify how and why unique animal and plant structures and behaviors are adaptive. Examples might include a plant developing thorns for protection from birds and larger herbivores; an octopus copying the color and texture of its surroundings for camouflage; vultures spreading their wings toward the Sun to kill bacteria acquired when feeding on carrion; etc.* - *describe changes to the environment that have caused some species to become endangered.*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Describe and explain how living things have changed over geological time using fossils and other evidence. *Students will:* ▪ *explain the lines of evidence showing that two specific organisms are related by common ancestors.* ▪ *explain how biological evolution can account for the diversity of species developed over time.* ▪ *cite which variations within a population would be naturally selected for a specific environment and why.* ▪ *identify behaviors or specialized organs/structures that organisms have developed (inherited) over time in response to environmental pressures. Examples might include camouflage, long necks on giraffes, etc.* ▪ *describe conditions that might cause a species to become endangered or extinct.*	Analyze the theory of natural selection as a mechanism for change over time. *Students will:* ▪ *differentiate between adaptive or non-adaptive variations within a species with respect to the environment.* ▪ *recognize that, over time, natural selection may result in speciation (development of a new species) as well as the development of subspecies.* ▪ *recognize that natural selection and its evolutionary consequences provide scientists with an explanation for the fossil record as well as an explanation for the striking molecular similarities among varied species.* ▪ *understand the Linnaean biological classification system as a hierarchy of groups and subgroups based on similarities which reflect evolutionary relationships.*	

EARTH AND SPACE SCIENCE: Understand physical properties of the Earth, how those properties change, and the Earth's relationship to

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
THE DYNAMIC EARTH			
Understand the properties and limited availability of the materials which make up the Earth.	Identify the structure of the Earth system and changes that can occur in its physical properties.	Identify materials that make up the Earth.	Compare and contrast the properties and uses of Earth materials. *Students will:* ▪ *recognize that Earth materials have different physical and chemical properties that can be used in different ways such as for building materials, as sources of fuel or as an environment for growing plants.* ▪ *identify how soils vary from place to place in color, texture, components, reaction to water and ability to support the growth of plants.* ▪ *distinguish among Earth materials when given a description of the location found or primary use.* ▪ *recognize that some rocks are made of a single substance (a mineral), but most are made of several substances.* ▪ *identify effects of interactions among Earth materials, for example, erosion of soil by wind and water, smoothing of rocks by running water.* ▪ *identify properties of fossils that provide evidence of the kind of plants or animals that produced them.*

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other celestial bodies.

Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Describe how the Earth's surface changes over time.	Analyze the ongoing evolution of the Earth system.	Evaluate the consequences of human interventions on the Earth's system.
Students will: ▪ *recognize the solid Earth is layered with a lithosphere, a hot convecting mantle and a dense metallic core.* ▪ *understand that the lithospheric plates move at rates of centimeters per year in response to movements in the mantle. Earthquakes, volcanic eruptions, mountain building and continental movements result from the plate motions.* ▪ *distinguish between constructive (crustal deformation, volcanic eruption and sediment deposition) and destructive (weathering and erosion) forces in land formation.* ▪ *discriminate between steps in the rock cycle, types of rocks formed (sedimentary, metamorphic, igneous), and consequent changes to Earth's surface.* ▪ *identify the processes that result in different kinds of land forms.* ▪ *identify factors affecting water flow, soil erosion and deposition.* ▪ *understand the evidence that supports the theories of continental drift and plate tectonics.*	*Students will:* ▪ *describe the movement of crustal plates and identify the evidence of such movement.* ▪ *explain cycles such as the carbon cycle and the rock cycle; analyze their roles in the dynamic equilibrium of Earth systems.* ▪ *describe and evaluate theories of Earth's origin and early history using scientific evidence.* ▪ *analyze geologic evidence to determine geologic history.* ▪ *describe methods of determining ages of rocks, fossils and remnants of trees.* ▪ *analyze the historic effects of changes in temperature and landforms on evolving life forms.* ▪ *describe the effect of early life forms on the early atmosphere.* ▪ *relate evidence they can see of short-term, small scale changes around them to the global, long-term changes described by scientists.* ▪ *distinguish among rates of change from sudden and cataclysmic to extremely slow.*	

EARTH AND SPACE SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
THE DYNAMIC EARTH (continued)			
Understand changes occurring within the lithosphere, hydrosphere and/or atmosphere of the Earth.	Explain changes occurring within the lithosphere, hydrosphere and/or atmosphere of the Earth.	Identify daily and seasonal weather changes.	Describe patterns of seasonal weather and climate. *Students will:* ▪ *describe weather in measurable quantities such as temperature, wind direction, wind speed and precipitation.* ▪ *understand how to use measurement, collection, observation and recording strategies for weather.* ▪ *interpret data over a period of time and use information to describe changes from day to day, week to week and season to season.* ▪ *predict weather patterns for different parts of the United States based upon season and geography.* ▪ *compare the weather in their own area with weather in other areas and other climates.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Explain the water cycle and its relationship to weather and climatic patterns.	Analyze energy transfer and its effects on global climate.	
Students will: ▪ *trace a drop of water through the water cycle and be able to explain the process.* ▪ *know that clouds, formed by the condensation of water vapor, affect weather and climate.* ▪ *define factors that cause or affect weather pattern.* ▪ *identify the difference between weather and climate.* ▪ *identify examples of evaporation and condensation in students' environment.* ▪ *identify factors which affect the rate of evaporation, condensation and cloud formation.* ▪ *explain the effect of oceans on temperature and precipitation patterns.* ▪ *distinguish among surface water, atmospheric water and ground water.* ▪ *identify how geography (proximity to oceans, mountains, etc.) affects climate.* ▪ *identify the Sun as the source of energy that drives the water cycle.*	*Students will:* ▪ *describe the effect of carbon dioxide and other gases in the atmosphere on the amount of solar energy captured by the Earth system.* ▪ *explain the effect of ozone on solar radiation which reaches Earth's surface.* ▪ *explain how heating the Earth's surface and atmosphere affect wind and ocean currents.* ▪ *analyze the effect of factors such as cloud cover, rotation of Earth, and positions of mountains and oceans on energy transfer and global climate.* ▪ *analyze the effects on global climate of such human activities as the burning of fossil fuels, cutting or burning of trees and stimulation of plant growth on the amount of carbon dioxide in the atmosphere.*	

EARTH AND SPACE SCIENCE (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
THE EARTH IN SPACE Understand the Earth's place in the solar system and the universe.	Explain relationships among the Earth, Sun, Moon and the solar system.	Identify and trace the movement of objects in the sky.	Describe the Earth's place in the solar system and the patterns of movement of objects within the solar system. *Students will:* ■ *describe Earth's movement in the solar system.* ■ *identify the patterns of movement and the apparent shape of the Moon over a monthly cycle.* ■ *recognize the movement and shape of shadows relative to the position of the Sun.* ■ *interpret a diagram of the position of Earth, Moon and Sun to predict Moon phases or seasons at a designated point on Earth.* ■ *predict, based on seasons and position of Earth, when during the year to expect longer hours of daylight in Oregon.* ■ *recognize the relationship between position of the Earth and Sun as it affects seasons and lengths of daylight.*
THE UNIVERSE Describe natural objects, events and processes outside the Earth, both past and present.			

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Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Explain the relationship of the Earth's motion to the day, the year, the phases of the Moon and the eclipses. *Students will:* ■ *interpret a diagram of the Sun, Earth and Moon and make predictions as to phases of the Moon, seasons, eclipses or night-day cycles.* ■ *recognize the Sun as the major source of energy for phenomena on Earth's surface, such as plant growth, winds, ocean current and the water cycle.* ■ *determine the causes of seasons and make predictions about seasons based on a diagram of the tilt of Earth's rotation on its axis and its position relative to the Sun.* ■ *trace the shape of the orbit of Earth around the Sun and the orbit of the Moon around Earth, with corresponding timelines.* ■ *know that gravity is the force that keeps planets in orbit around the Sun, holds us to Earth's surface, and explains the phenomena of the tides.* ■ *predict changes in the length of daylight due to the motion of Earth around the Sun.* ■ *relate changes such as length of day and shadows to Earth, Sun and Moon motions.* ■ *relate the length of a day, a month and a year to motions of Earth and the Moon.*	Describe how the Earth's motions and tilt on its axis lead to changes in the seasons. *Students will:* ■ *interpret a diagram of the Sun, Earth and Moon, and make predictions as to phases of the Moon, seasons and day-night cycles.* ■ *recognize the Sun as the major source of energy for phenomena on Earth's surface such as growth of plants, winds, ocean currents and the water cycle.* ■ *indicate the season in Oregon based upon a diagram of the tilt of the Earth on its axis and its position relative to the Sun.* ■ *describe how the tilt of Earth on its axis affects the amount of atmosphere through which solar radiation must pass before reaching Earth and, therefore, the amount of filtration which occurs.* ■ *evaluate the effect of angle of incidence of solar radiation on the amount of energy collected per unit area of Earth's surface.* ■ *explain how changes in the angle of incidence, the path of solar radiation through the atmosphere, and the number of hours of sunlight can dramatically affect the amount of energy reaching Earth's surface.*	Explain the position and motion of our solar system in the universe.

HISTORY AND NATURE OF SCIENCE: Understand science as a human endeavor, the nature of scientific knowledge and the history of science as it relates to and clarifies scientific inquiries.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Understand that science is a human endeavor practiced by individuals from many different cultures.	Describe science as a human endeavor.		Identify different ways and places in which scientists work.
Understand that scientific knowledge is subject to change based on new findings and results of scientific observation and experimentation.	Explain how scientific knowledge changes by evolving over time, almost always building on earlier knowledge.		Identify examples of how scientific knowledge changes over time.
Understand that scientific knowledge distinguishes itself through the use of empirical standards, logical arguments and skepticism.	Explain that scientific knowledge is developed through the use of empirical standards, logical arguments and skepticism.		

SCIENCE AND TECHNOLOGY: Understand the interconnections among science, technology and society.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Understand the relationship that exists between science and technology.			
Understand the process of technological design to solve problems and meet needs.			

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Describe ways scientists differ in the phenomena they study and how they go about their investigations.	Explain how scientists' investigations and interpretations have been influenced by societal, cultural and personal beliefs.	Explain how scientists' investigations and interpretations have been influenced by societal, cultural and personal beliefs.
Describe and explain how scientific knowledge and processes have changed over time.	Analyze advances in science and technology that have had important long-lasting effects on science and society.	Analyze contemporary scientific investigations and identify the historical contributions influencing the investigations.
Identify in scientific investigations examples of the use of logic, respect for rules of evidence, openness to criticism and public reporting of methods and procedures.	Analyze scientific investigations for the use of logic, respect for the rules of evidence, openness to criticism and public reporting of methods and procedures.	Analyze the development of a recognized scientific concept, principle or theory and explain the use of observation, logic and creative imagination.

GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**

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SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES: Understand that science provides a basis for understanding and

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Describe the role of science and technology in local, national and global issues. Describe how daily choices of individuals, taken together, affect global resource cycles, ecosystems and natural resource supplies. Explain risks and benefits in personal and community health from a science perspective.			

SCIENTIFIC INQUIRY: Use interrelated processes to pose questions and investigate the physical and living world.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Identify scientific questions and form hypotheses that are based on observations and can be tested through scientific investigations.	Identify testable questions and form hypotheses based on observations.	Ask questions about objects, organisms and events that are based on observations and can be explored through simple investigations.	Ask questions and make predictions that are based on observations and can be explored through simple investigations. *Students will:* ▪ *ask relevant questions about objects, organisms and events in the world.* ▪ *identify questions that can be explored through a scientific investigation.* ▪ *state their questions in a form which can lead to the design of an experiment or other investigation that will answer the question.* ▪ *recognize and seek information from reliable resources, including prior scientific knowledge, observation and trying things out (experimenting).* ▪ *analyze data to determine possible questions for further investigation.*

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acting on personal and social issues.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Ask questions and form hypotheses that are based on observations, scientific concepts and can be explored through scientific investigations. *Students will:* ▪ *ask relevant questions about objects, organisms and events in the world.* ▪ *frame questions so that cause and effect can be distinguished; identify variables that influence a situation and can be controlled.* ▪ *describe the relationship between proposed questions and the scientific ideas, concepts and quantitative relationships that guide the investigations.* ▪ *evaluate scientific questions in terms of the importance of the questions or the usefulness of the information to be generated from investigation of the questions.* ▪ *state questions narrowly enough so that they can be answered through investigation, but broadly enough so that the results will be meaningful.* ▪ *recognize and seek information from reliable resources, including prior scientific knowledge, observation and experimentation.*	Ask questions and form hypotheses that are based on observations, scientific concepts and can be tested through scientific investigations. *Students will:* ▪ *recognize questions that distinguish between cause and effect.* ▪ *identify variables that influence a situation and need to be controlled.* ▪ *identify appropriate background research and study needed in order to develop unique new questions and hypotheses.* ▪ *identify hypotheses that are testable and likely to yield new information or improved explanations.* ▪ *recognize the concepts that guide inquiry, such as natural curiosity, the need to know, objectivity, honesty, precision, thoroughness, ingenuity and creativity.*	Ask questions and form hypotheses about current issues that are based on observations and scientific concepts, and can be tested through scientific investigations.

SCIENTIFIC INQUIRY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Design and conduct scientific investigations using knowledge of unifying concepts and processes, appropriate tools and techniques.	Design and conduct investigations to answer questions and verify hypotheses.	Plan and conduct a simple investigation.	Design and conduct an investigation to answer questions or verify predictions. *Students will:* ▪ *recognize a fair test.* ▪ *identify and be familiar with tools, such as magnifiers, thermometers and rulers, that may be used to gather data and extend the senses.* ▪ *recognize how to measure and record simple properties such as temperature, time, distance, volume and mass, and observe and record changes in these properties.* ▪ *identify which tools to use for measuring simple properties.* ▪ *understand which units of measure are used for the properties measured.* ▪ *know approximate magnitudes of such simple units of measurement as centimeter, meter, inch, foot, liter and quart.* ▪ *recognize the importance of controlling variables and observing objectively.* ▪ *determine whether particular investigations are likely to be useful for answering particular questions.* ▪ *identify print and nonprint sources from which to gather information.* ▪ *distinguish between types of investigations such as experimenting, studying published materials, asking an expert and designing devices to perform a particular function.*

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GRADE 8 BENCHMARK	**CIM/GRADE 10 BENCHMARK**	**CAM/GRADE 12 BENCHMARK**
Design and conduct a scientific investigation to answer questions or verify hypotheses.	Design and conduct a scientific investigation that controls variables and applies relevant mathematics and technologies.	Design and conduct a scientific investigation based on questions or hypotheses related to a current issue.
Students will: ■ *identify a controlled experiment.* ■ *recognize a set of procedures which will logically lead to the answer of a proposed question or hypothesis.* ■ *recognize the importance of the basics of experimenting such as controlling variables, quantifying results and observing objectively.* ■ *distinguish between various types of investigations including fieldwork, controlled experiment, etc., including which type of investigation is appropriate to answer a question.* ■ *identify appropriate print and nonprint resources from which to acquire information.* ■ *identify and be familiar with instruments such as microscopes, scales, balances and other lab and field equipment used to gather data and extend the senses.* ■ *perform mathematical manipulations dealing with simple derived values such as area, volume, density and speed.* ■ *identify approximate magnitudes of units of measure such as square and cubic centimeters, square and cubic inches, grams, kilograms, ounces and pounds.* ■ *identify real-world values of points on temperature scales, such as freezing, boiling, room temperature and body temperature.* ■ *understand the need for multiple experimental units, for example, planting five to ten different containers of plants in an experimental group and five to ten in a control group rather than one in each group.*	*Students will:* ■ *distinguish among various technologies and tools suited to different purposes and select the most appropriate for the task.* ■ *be alert to accuracy and precision in gathering data.* ■ *incorporate systematic observation, critical reading, accurate measurement, identification of important variables into an investigation.* ■ *understand how to use data-gathering tools such as microscopes, observation protocols, Celsius and Fahrenheit thermometers, pressure gauges, balances, calipers, electrical meters, calculators and computers in obtaining and analyzing data.* ■ *compute and compare derived mathematical values such as parts per million, pressure (force per unit area), density, acceleration, thermal energy, (mass x specific heat x temperature change), molecules per unit mass, and mass per mole.* ■ *demonstrate logical connections between scientific concepts guiding a hypothesis and the design of an experiment.* ■ *plan, in advance, the various steps of an investigation, and the manner in which findings will be organized and reported.* ■ *revise planned procedures based on data provided in carrying out an experiment.* ■ *identify limitations and flaws in experimental design.* ■ *recognize the need for replication of experiments.*	

SCIENTIFIC INQUIRY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Use analysis and interpretation to formulate explanations and draw reasonable conclusions based on the results of an investigation.	Analyze data collected from an investigation, draw conclusions and explain results.	Use the data collected from an investigation to explain the results.	Analyze, interpret and summarize data from investigations. *Students will:* ▪ *use evidence presented to determine whether an explanation is plausible.* ▪ *distinguish between scientific fact and opinion.* ▪ *distinguish between logical and illogical explanations.* ▪ *realize that just because B follows A does not necessarily mean that A caused B.* ▪ *use simple mathematics, such as subtracting "before" data from "after" data or averaging, to analyze data.* ▪ *recognize alternate explanations and points of view; check data against experiences, observations and knowledge.*

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Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Analyze and summarize data including possible sources of error. Explain results and offer reasonable and accurate interpretations and conclusions.	Analyze data and evaluate sources of error and/or bias. Propose explanations that are supported by data and knowledge of science concepts and principles.	Analyze data collected in a scientific investigation on a current problem or issue and evaluate sources of error and/or bias.
Students will: ▪ *evaluate examples of the use of evidence to develop descriptions, explanations and models.* ▪ *propose, recognize, analyze, consider and critique alternate explanations; distinguish among scientific fact, opinion, inference and conjecture.* ▪ *generate summary statistics such as mean, mode, median, maximum and minimum to aid in the analysis of data.* ▪ *use paper and pencil calculation, calculators and computers to analyze data.* ▪ *identify cases in which events occur concurrently, but are not necessarily connected in a cause and effect relationship.* ▪ *differentiate between description and explanation (i.e., "Here is what happened" versus "Here is why I think it happened").* ▪ *identify design problems within an investigation and propose solutions to those problems.*	*Students will:* ▪ *identify whether or not there is enough evidence to answer a scientific question or if there is a need for further investigation.* ▪ *identify and choose appropriate intellectual models and simple mathematical and statistical tools for gathering and analyzing data.* ▪ *use scientific criteria to find preferred explanations.* ▪ *use prior knowledge, evidence, logic and carefully constructed arguments for explanations.* ▪ *identify problems or design opportunities; propose designs and choose among alternatives; implement a solution and evaluate its consequences.* ▪ *propose, recognize, analyze, consider and critique alternative explanations; distinguish between scientific fact and opinion.*	

SCIENTIFIC INQUIRY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Communicate investigations, explanations and conclusions.	Communicate and defend findings using scientific arguments.	Communicate findings and explanations through speaking, writing, drawings, graphs and/or charts.	Report results through speaking, writing, graphs and charts. *Students will:* ▪ *recognize how to write instructions that others can follow as well as how to explain a scientific concept or procedure to someone.* ▪ *identify how data can be represented in appropriate manner such as with numbers, drawings, pictures, charts, sentences, tables and models.* ▪ *explain why the results from one investigation might differ from the results of others performing the same investigation.* ▪ *analyze and critique scientific work and recognize how the same investigation can be done better next time.* ▪ *recognize appropriate communication forms suited to purpose and audience.*

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Communicate and evaluate an investigation and findings through multiple modes.	Communicate and defend a logical scientific argument based on findings from an investigation.	Communicate and defend a logical scientific argument based on findings from an investigation.
Students will: ▪ *represent data in multiple ways including reports, drawings, concept maps, spreadsheets and computer graphics.* ▪ *recognize appropriate reporting mode suited to purpose and audience.* ▪ *identify which evidence is the most important to report.* ▪ *organize data to produce the clearest report or strongest evidence.* ▪ *identify the best type of graph to use to illustrate data.* ▪ *form logical arguments about cause and effect; argue from evidence, including data presented and prior scientific knowledge.* ▪ *recognize others' points of view; check his or her own and others' explanations against experiences, observations and knowledge.* ▪ *recognize design problems in an investigation and the effect those problems have on the appropriateness of and confidence in the investigation's conclusions.*	*Students will:* ▪ *represent data and results in multiple ways (for example, numbers and statistics; drawings, diagrams, concept maps and pictures; sentences; charts and tables; models) and use the most effective way to clearly make the point.* ▪ *decide which evidence is most important to report.* ▪ *recognize that all data must be reported including data which does not support the conclusion.* ▪ *form logical arguments about cause and effect.* ▪ *recognize the need for reports with different levels of detail, from simple summaries to reports which would enable exact replication of the investigation.* ▪ *recognize communication forms suited to a particular purpose and audience.* ▪ *respond to critical comments with data and reasoning.* ▪ *understand the limits of generalizing an investigation's results.*	

CONTENT STANDARDS

FOR

THE ARTS

Proficiency in the arts includes creating, performing or presenting art, recognizing artistic qualities in works of art and understanding the historical and cultural contexts in which art is created. The arts include music, visual art, dance, theater and cinema.

AESTHETICS AND ART CRITICISM: Respond to, explain and analyze works of art, based on technical, organizational and aesthetic elements.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Use knowledge of technical, organizational and aesthetic elements to describe and analyze one's own art and the art of others.	Explain and analyze works of art, applying knowledge of technical, organizational and aesthetic elements.	Recognize artistic elements in works of art.	Identify artistic elements and principles which can be used to analyze works of art.
Respond to works of art, giving reasons for preferences.	Respond to works of art, giving reasons for preferences.	Describe an idea or feeling connected with viewing or hearing a work of art.	Identify personal preferences and their relationship to artistic elements.

HISTORICAL AND CULTURAL PERSPECTIVES: Understand how works of art relate to the time periods and cultures in which they are created and how certain works of art from various time periods and cultures are related.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Identify both common and unique characteristics found in works of art from various time periods and cultures.	Relate works of art from various time periods and cultures to each other.	Identify an event or condition which inspired a work of art.	Identify distinguishing features of works of art and their historical and cultural contexts.
Understand that the arts have a historical connection.	Describe how historical and cultural contexts influence works of art.		Describe how historical or contemporary events influenced or influence works of art.
Explain how a work of art reflects the artist's personal experience in a society or culture.			
Understand how the arts serve a variety of personal, professional, practical and cultural needs.			

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Recognize and describe how technical, organizational and aesthetic elements contribute to the ideas, emotions and overall impact communicated by works of art.	Analyze how technical, organizational and aesthetic elements contribute to the ideas, emotions and overall impact communicated by works of art.	Analyze and communicate how technical, organizational and aesthetic elements contribute to the ideas, emotions and overall impact of art work or media.
State preferences for works of art and reasons for preferences, based on key artistic elements and principles used in producing the art.	State preferences for works of art and reasons for preferences, based on an analysis of how artistic elements and principles are used in producing the art.	Analyze the interaction of the artistic elements and principles used in producing art or media and communicate conclusions.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Describe and explain distinguishing features of works of art and their historical and cultural contexts.	Analyze a work of art by comparing and contrasting it to another work from a different time or culture.	Describe how historical or contemporary concepts and events influence works of art or media.
Discuss and compare works of art from different time periods and cultures emphasizing their historical context.	Describe and explain how the characteristics of a society or culture influenced works of art.	

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CREATE, PRESENT AND PERFORM: Use ideas, skills and techniques in the arts.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Apply artistic elements and technical skills to create, present and/or perform works of art for a variety of audiences and purposes.	Apply artistic elements and technical skills to create, present and/or perform works of art for a variety of audiences and purposes.	Create, present and/or perform a single form of art, using experiences, imagination, artistic methods and composition to achieve desired effect.	Create, present and/or perform a work of art, using experiences, imagination, observations, artistic elements and technical skills to achieve desired effect.
Communicate verbally and in writing, using knowledge of the arts to describe and/or evaluate one's own artwork. Express ideas, moods and feelings through various art forms.	Communicate verbally and in writing about one's own artwork.	Communicate, using a simple vocabulary related to various art forms.	Communicate, using an extended vocabulary related to various art forms.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Create, present and/or perform a work of art, selecting and applying artistic elements and technical skills to achieve desired effect.	Create, present and/or perform a work of art, selecting, using and combining artistic elements and technical skills to achieve desired effect.	Demonstrate how technical organizational and aesthetic elements combine/contribute to an overall product or production.
Communicate verbally and in writing about one's own artwork.	Evaluate and reflect on one's own artwork.	Evaluate and reflect on the process and resulting product of one's own art or media.

CONTENT STANDARDS

FOR

SOCIAL SCIENCES

The study of the social sciences (history, civics, geography and economics) prepares students for responsible citizenship. It enables students to evaluate historical and contemporary issues, understand global relationships and make connections between past, present and future.

HISTORY: Relate significant events and eras in United States and world history to past and present issues and developments.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
HISTORICAL RELATIONSHIPS			
Interpret and reconstruct chronological relationships.	Understand and represent chronological order, sequences and relationships in history.	Recognize calendar time by days, weeks, months, years, decades and centuries and their relationships.	Sequence events in chronological order.
Analyze cause-and-effect relationships, including multiple causation.		Describe a cause-and-effect relationship between two events.	Describe cause-and-effect relationships, considering the influence of individuals and events.
Understand relationships among events, issues and developments in different spheres of human activity (i.e., economic, social, political, cultural).			
Recognize and interpret change and continuity within four broad content themes: interaction of people, cultures and ideas; economic and technological developments and their impact on society; American politics and political thought; role of the United States in the world.			Recognize change and continuity over time within the following content theme: the interaction of people, cultures and ideas.
Understand how contemporary perspectives affect historical interpretations.			

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Represent dates and chronological sequences in history.	Represent dates and chronological sequences in history.	Make a reasoned hypothesis concerning future events or developments based on the historical record.
Identify multiple causes of a single event and explain how a single event can impact more than one sphere of human activity.	Recognize and explain relationships among events, issues and developments in different spheres of human activity.	Explain how and why historical interpretations differ and how they are affected by time (i.e., historical context).
Describe change and continuity over time within the following content theme: economic and technological developments and their impact on society.	Describe change and continuity over time within the following two content themes: American politics and political thought; and the role of the United States in the world.	Recognize and explain relationships among events, issues and developments in different spheres of human activity.

HISTORY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
UNITED STATES HISTORY			
Understand and interpret events, issues and developments within and across eras of United States history: Era 1: Three Worlds Meet (Beginnings to 1620) Era 2: Colonization and Settlement (1585-1763) Era 3: Revolution and the New Nation (1754-1820s) Era 4: Expansion and Reform (1801-1861) Era 5: Civil War and Reconstruction (1850-1877) Era 6: Development of the Industrial United States (1870-1900) Era 7: Emergence of Modern America (1890-1930) Era 8: Great Depression and World War II (1929-1945) Era 9: Post-war United States (1945-1970s) Era 10: Contemporary United States (1968-present)	Explain and interpret significant events, issues and developments in U.S. history.	Explain why a key individual or event in U.S. history is important. Describe how life in the United States today is different from and similar to life in the United States over the past 50 years.	Interpret major events, issues and developments involved in making a new nation within the following topic areas: Land and People Before Columbus; Age of Exploration; Settling the Colonies and the Trans-Appalachian West; War for Independence; and Westward Expansion.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Interpret major events, issues and developments around issues of growth and conflict within the following topic areas: The Constitution of the United States; Emergence of Sectional Differences in Northeast, South and West; Civil War and Reconstruction; and Rise of Industrial America and Closing of the Frontier.	Interpret major events, issues and developments around issues of continuity and change in the 20th century within the following topic areas: Progressive Era; World War I; Jazz Age; Great Depression; World War II; and Linking Past to Present: Post-war America and Contemporary Issues.	Interpret contemporary issues and events by tracing their historical origins.

HISTORY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
WORLD HISTORY			
Understand and interpret events, issues and developments within and across eras of world history: Era 1 : Beginnings of Human Society Era 2 : Early Civilizations and the Emergence of Pastoral Peoples (4000 BC-1000 BC) Era 3: Classical Traditions, Major Religions and Giant Empires (1000 BC-300 AD) Era 4: Expanding Zones of Exchange and Encounters (300-1000) Era 5: Intensified Hemispheric Interactions (1000-1500) Era 6: Emergence of the First Global Age (1450-1770) Era 7: Age of Revolutions (1750-1914) Era 8: Half-Century of Crisis and Achievement (1900-1945) Era 9: 20th Century since 1945: Promises and Paradoxes	Understand and interpret significant developments in world history.		

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Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Describe major developments in world history as they relate to: Ancient Civilizations ▪ China ▪ Mesopotamia, Egypt ▪ Hebrews, Greeks ▪ Rome Medieval and Early Modern Times ▪ Rise of Arabic World ▪ African States ▪ Civilizations of the Americas (Mayas, Incas, Aztecs) ▪ Feudal Societies of Japan and Europe ▪ Europe During the Renaissance and Reformation ▪ Early Modern Europe: Age of Exploration and Enlightenment (rise of democratic ideas) ▪ Industrial Revolution	Explain major developments in world history as they relate to: The Modern World ▪ Rise of Imperialism and Colonialism ▪ World War I and its Consequences ▪ Totalitarianism in the Modern World: Nazi Germany and Stalinist Russia ▪ World War II: Causes and Consequences ▪ Nationalism after World War II	Interpret contemporary issues and events by tracing their historical origins.

HISTORY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
STATE AND LOCAL HISTORY Understand and interpret events, issues and developments in the history of one's family, local community and culture. Understand and interpret the history of the state of Oregon.			

CIVICS: Understand and apply knowledge about governmental and political systems, and the rights and responsibilities of citizens.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
STRUCTURE, FUNCTION AND ROLE OF GOVERNMENT			
Describe the organization, responsibilities and interrelationships of local, state and federal government in the United States. Identify the roles of the three branches of government and explain how their powers are distributed and shared.	Describe the structure and function of local, state and federal government in the United States.	Describe services provided by local government, such as fire and police protection and library services.	Identify examples of authority and the use of power without authority.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Explain how legislative, executive and judicial powers are distributed and shared among the three branches of government.	Identify problems and solutions related to the distribution of power between the legislative, executive and judicial branches of government.	Apply principles of separation of power, checks and balances, and federalism to contemporary issues.
Describe the roles and relationships among local, state and federal government.		Analyze a local government action and discuss the impact of federal and state government on the action.

CIVICS (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
PRINCIPLES, IDEALS AND DOCUMENTS OF THE U.S. GOVERNMENT			
Understand historic, geographic, social and economic factors that help shape American society and ideas about government, including the structure and meaning of the Constitution and Bill of Rights.	Explain the principles and ideals upon which the government of the United States is based.	Identify the purposes of rules and laws.	Explain the relationship between individual rights and responsibilities.
Describe the principles and ideals of American democracy (e.g., individual rights, public good, self government, justice, equality, popular sovereignty, constitutional government, rule of law, separation of powers, checks and balances, federalism).			

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Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Interpret the meaning of specific rights guaranteed in the U.S. Constitution, including liberty, free expression, privacy, due process and equal protection.	Analyze challenges to the U.S. Constitution and their resolutions.	Analyze the clash between majority rule and minority rights using contemporary issues.
	Analyze how specific laws protect individual rights and/or serve the common good.	Analyze how cultural change has impacted the interpretation of the U.S. Constitution and the Bill of Rights.

CIVICS (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
ROLES, RIGHTS AND RESPONSIBILITIES OF U.S. CITIZENS			
Describe personal, political and economic rights of citizens in the United States. Describe participatory responsibilities of citizens in the community (voluntarism) and in the political process (becoming informed about public issues and candidates, joining political parties/interest groups/associations, communicating with public officials, voting, influencing lawmaking through such processes as petitions/initiatives). Explain how political activity provides opportunities for choice and participation. Describe the character traits necessary to preserve and improve the American constitutional government (e.g., individual responsibility, self-discipline, respect for others and the law, honesty, civic mindedness, ability to make informed choices).	Interpret the roles, rights and responsibilities of citizens in the United States.	Identify ways that Americans can participate in their community.	Describe how different kinds of political activity illustrate characteristics of United States democracy.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Explain the importance of civic responsibilities (i.e., obeying the law, paying taxes, performing public service).	Evaluate the argument that all rights have limits.	Identify a public issue and describe strategies for citizen participation in dealing with the issue.

CIVICS (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
INTERNATIONAL RELATIONS			
Explain how nations interact with each other, how events and issues in other countries can affect citizens in the United States and how actions of the United States can affect other peoples and nations. Describe how the American concepts of democracy and individual rights and responsibilities influence events in other countries and how events in other countries influence American politics and society. Describe U.S. foreign policy and its consequences in relation to national interest and American values.	Describe how governments of the world interact.		Identify forms of government interactions.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Describe how government actions in one country can affect citizens in another country.	Describe the effects of U.S. political ideas on other nations and the impact of world political developments on the United States.	

GEOGRAPHY: Understand and use geographic skills and concepts to interpret contemporary and historical issues.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
MAPS, CHARTS, GRAPHS AND OTHER GEOGRAPHIC TOOLS AS SOURCES OF INFORMATION			
Understand the spatial concepts of location, distance, direction, scale, movement and region. Recognize and use appropriate geographic tools and technology (e.g., maps, globes, graphs, diagrams, aerial and other photographs and satellite-produced images) to answer geographic questions, analyze spatial distributions and patterns and solve geographic problems. Locate major physical and human (cultural) features of the Earth. Use maps to organize information about people, places and environments in a spatial context.	Read, interpret and make maps, charts and graphs to explain spatial relationships.	Locate places on a neighborhood map and describe a route from one place to another.	Use maps, charts and graphs to illustrate geographic concepts. Locate and identify on maps the continents and oceans of the world, the 50 states of the United States and the major physical characteristics of Oregon.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Identify the location of key physical and cultural features on maps and globes to answer geographic questions.	Use maps to analyze the advantages and disadvantages stemming from relative location of people, places and environments.	Select and design appropriate charts, graphs and maps to illustrate themes or concepts relative to people, places and environments. Use the processes of analysis, synthesis, and evaluation to interpret geographic information from a variety of sources.

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GEOGRAPHY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
PHYSICAL AND CULTURAL CHARACTERISTICS OF PLACES AND REGIONS			
Compare physical (e.g., landforms, vegetation, wildlife, climate and natural hazards) and human (e.g., population, land use, language and religion) characteristics of places and regions. Understand the social, cultural and economic processes that change the characteristics of places and regions over time (e.g., development, accessibility, migration, resource use, belief systems, transportation and communication systems, major technological changes, environment, wars). Understand why places and regions are important to human identity and serve as symbols to unify or fragment society.	Identify the physical and human (cultural) characteristics of places and regions and how they change through time.	Describe characteristics of places.	Describe and explain physical and cultural characteristics of regions in the United States.

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Compare physical and cultural characteristics of the regions of the world.	Compare physical and cultural characteristics of the same place at different times in history.	Identify and explain how physical and cultural characteristics of a place have, over time, contributed to a contemporary issue.

GEOGRAPHY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
DISTRIBUTION AND MIGRATION OF PEOPLE, IDEAS AND PRODUCTS			
Analyze the causes of human migration (e.g., density, food and water supply, transportation and communication systems) and its effects (e.g., impact on physical and human systems). Understand the functions, sizes and spatial arrangements of urban areas on Earth. Compare and contrast one area of settlement to another (e.g., resources, length of settlement, accessibility). Predict trends in world population numbers and patterns including differences in settlement of developing and developed countries.	Describe the distribution and migration of human populations, ideas and products and predict future trends.	Identify reasons people move from one location to another.	Identify human migration patterns in the United States.

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Grade 8 Benchmark	CIM/Grade 10 Benchmark	CAM/Grade 12 Benchmark
Identify and describe transportation and communication networks affecting the flow of people, goods and ideas.	Analyze demographic patterns and transportation and communication networks to predict contemporary trends.	Analyze demographic patterns and transportation and communication networks to predict future trends.
		Identify and analyze the relationship of economic activity, both historical and current, on the movement and patterns of people and goods.

GEOGRAPHY (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
INTERACTION BETWEEN PHYSICAL ENVIRONMENTS AND HUMANS			
Describe the consequences of humans changing the physical environment (e.g., ozone, forests, air, water) and how human changes in one place affect other places. Understand how differing points of view, self interests and global distribution of natural resources play a role in conflict over territory. Describe how physical characteristics of places and regions affect human activities. Understand the geographic results of resource use and management programs and policies.	Explain how humans and the physical environment impact and influence each other.	Identify how people depend on and modify the physical environment.	Describe ways people have adapted to and been influenced by their physical environment.

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Explain how human modification of the physical environment in one place affects other places.	Analyze the relationship between human settlement patterns and changes in the Earth's physical systems.	Evaluate contemporary issues dealing with the relationships between humans and the Earth's physical systems and hypothesize future situations and potential solutions.

ECONOMICS: Understand economic concepts and principles and how available resources are allocated in different economies.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Understand that resources are limited (e.g., scarcity, opportunity cost). **Understand economic trade-offs and how choices result in both costs and benefits to individuals and society.**	Understand economic concepts and principles to make informed economic choices.	**Identify what will be gained and what will be given up when making an economic choice (i.e., costs and benefits of recycling).**	Identify incentives that affect economic decisions and analyze how incentives affect student's own economic decisions.
Understand economic concepts, principles and factors affecting the allocation of available resources.	Understand factors affecting allocation of resources, including the role of government and institutions on economic activity.		Describe how natural, human and capital resources can be used to satisfy wants and produce goods and services.
Understand the role of government and institutions (i.e., banks, labor unions) in various economic systems in regard to the allocation of resources.			

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GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Explain how the interaction of supply and demand determines price.	Analyze the consequences of inflation and unemployment on savers, investors, producers and consumers.	Interpret macro economic information (e.g., unemployment, inflation, GDP, debt and deficits, taxation) and predict personal and social impact of policy decisions.
Explain the costs and benefits of economic choices regarding the allocation of resources.	Describe the role of government and institutions on economic activity.	Analyze a contemporary or historical local economic condition, identifying the decision-makers, possible solutions, and consequences of actions.
		Describe how government and economic institutions of various countries make economic decisions based on domestic and international realities (e.g., trade, health care, hunger).
		Compare how two nations' governments and economic institutions respond to an important need (e.g., hunger, health care, the arts, technology, education, full employment).

SOCIAL SCIENCE ANALYSIS: Design and implement strategies to analyze issues, explain perspectives and resolve issues using the

COMMON CURRICULUM GOALS	CONTENT STANDARDS	GRADE 3 BENCHMARK	GRADE 5 BENCHMARK
Define and clarify an issue so that its dimensions are well understood.	Define and clarify an issue so that its dimensions are well understood.	Develop a clarifying question that can be answered through simple research.	Distinguish essential and incidental information in clarifying an issue.
Explain various perspectives on an event or issue and the reasoning behind them.	Explain various perspectives on an event or issue and the reasoning behind them.	Recognize that there are different ways of looking at an event or issue.	Describe an event or issue from two points of view.
Identify, analyze and select a course of action to resolve an issue.	Identify, analyze and select a course of action to resolve an issue.	Identify alternative courses of action that could be chosen in a given situation.	List major strengths and weaknesses of alternative courses of action.

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

social sciences.

GRADE 8 BENCHMARK	CIM/GRADE 10 BENCHMARK	CAM/GRADE 12 BENCHMARK
Compare data to determine differences of fact and opinion in clarifying an issue.	Locate and use data from primary and secondary sources to clarify and research an issue.	Identify and explain the critical dimensions of an issue using two or more disciplines (e.g., an environmental issue addressed both biologically and economically).
Explain an event or issue from two or more points of view and explain why perspectives among individuals and groups vary.	Analyze an event or issue from multiple historical perspectives.	Explain the reasoning of two opposing positions on an issue.
Describe short- and long-term consequences of alternative courses of action.	List strengths and weaknesses and predict short- and long-term consequences to select a course of action.	Create a plan including multiple persuasive strategies to influence an existing group of decision-makers.
		Find or create multiple alternatives, list their strengths and weaknesses and predict short- and long-term consequences.

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CONTENT STANDARDS

FOR

SECOND LANGUAGE

Second language proficiency consists of communicating through listening, speaking, reading, writing and applying culturally appropriate practices in real-life situations in a second language. The stages below are based on American Council for Teachers of Foreign Language proficiency levels. They apply to commonly taught languages, such as Spanish, French and German.

COMMUNICATION: Express and comprehend ideas in a language other than English.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	STAGE 1	STAGE 2
LISTENING: Listen to/receive messages for a variety of purposes.			
Demonstrate comprehension of messages from authentic and other sources to gain information.	Demonstrate comprehension of messages from authentic and other sources to gain information.	Comprehend isolated words and everyday expressions.	Comprehend familiar ideas and details in short sentences and simple questions on a limited range of topics.
SPEAKING: Speak/ sign for a variety of audiences and purposes.			
Communicate information, express ideas and accomplish tasks. Communicate by asking and responding to questions, using introductions, greetings, courtesies and performing transactions. Express ideas, needs, likes, dislikes, suggestions and opinions by initiating and engaging in conversations.	Communicate information, express ideas and accomplish tasks.	Use memorized words and everyday expressions and identify familiar objects.	Use simple memorized phrases, sentences and questions on a limited range of topics.

Italicized text defines eligible content that may appear on the Oregon statewide assessment.

STAGE 3	STAGE 4	STAGE 5
Comprehend main ideas and details in statements and questions on everyday topics.	Comprehend main ideas and some supporting details from simple announcements, narratives and conversations in familiar situations on everyday topics.	Comprehend main ideas and supporting details from varied sources and conversations on a wide range of topics.
Use phrases, sentences and questions to express ideas and some details on a range of topics.	Use sentences and questions to communicate information and ideas and maintain simple conversations in familiar situations on everyday topics.	Use sentences and questions to communicate information in situations that are not routine.

COMMUNICATION (continued)

COMMON CURRICULUM GOALS	CONTENT STANDARDS	STAGE 1	STAGE 2
READING: Read/ videotext to comprehend a variety of printed materials. Comprehend and gain information from a variety of print/ videotext materials.	Comprehend and gain information from a variety of print/ videotext materials.	Comprehend some common words and phrases, including words similar to those in the first language.	Comprehend simple text by using contextual cues.
WRITING: Write/ compose effectively for a variety of audiences and purposes. Communicate information and express ideas in written/videotext form for a variety of audiences and purposes.	Communicate information and express ideas in written/videotext form for a variety of audiences and purposes.	Write/compose the alphabet, if any, of the second language. Write/compose memorized words and phrases.	Write/compose short phrases, lists and simple sentences.

CULTURE: Develop cultural understanding and demonstrate practices appropriate to the culture in which the language is used.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	STAGE 1	STAGE 2
Comprehend and use appropriate verbal and nonverbal practices in common situations occurring within a second language culture.	Comprehend and use appropriate verbal and nonverbal practices in common situations occurring within a second language culture.	Comprehend and use a few polite behaviors and basic nonverbal cues in very limited situations.	Comprehend and use a few simple cultural practices and customs.
Compare and contrast cultural practices of the first and second language cultures.	Compare and contrast cultural practices of first and second language cultures.	Identify a few basic cultural practices of a second language culture.	Compare basic similarities and differences between first and second language cultures.

STAGE 3	STAGE 4	STAGE 5
Comprehend main ideas and some supporting details from simple narratives and materials, such as menus, notes and schedules.	Comprehend main ideas and pertinent details from simple written materials including authentic sources.	Comprehend ideas and details from clearly organized, longer written materials such as essays or short stories.
Write/compose short messages, notes and simple guided paragraphs.	Write/compose short letters and simple paragraphs to meet practical needs and produce simple, guided compositions.	Write/compose letters or short essays to communicate information and ideas based on personal experiences.

STAGE 3	STAGE 4	STAGE 5
Comprehend and use some common social conventions, social courtesies and nonverbal cues.	Comprehend and use common social conventions, social courtesies and nonverbal cues.	Comprehend and use common social conventions, social courtesies and nonverbal cues in situations that are not routine.
Compare and contrast common social conventions, courtesies and nonverbal cues.	Compare and contrast first and second language cultural behaviors.	Compare and contrast first and second language behaviors not obvious to the inexperienced observer.

SECOND LANGUAGE

CONNECTION TO OTHER DISCIPLINES: Reinforce and increase knowledge of other subjects through the second language.

COMMON CURRICULUM GOALS	CONTENT STANDARDS	STAGE 1	STAGE 2
Acquire information and recognize viewpoints available through the second language and culture. Reinforce and increase knowledge of other subjects through the second language.			

NOTE: There are no content standards or proficiency stages defined for this common curriculum goal.

CONTENT STANDARDS

FOR

CAREER-RELATED LEARNING

The career-related learning standards describe basic knowledge and skills important for all students to succeed after high school in employment, college or other post-secondary training. In addition to the standards listed below, some possible examples also are included. The examples are intended to help clarify the standard and are not all inclusive.

CAREER-RELATED LEARNING STANDARDS

PERSONAL MANAGEMENT

STANDARDS	EXAMPLES
Demonstrate appropriate workplace behaviors.	The following are intended to help clarify the standard and are not all inclusive: ▪ Plan, organize and complete assigned tasks. ▪ Maintain regular attendance and be on time. ▪ Perform high quality work. ▪ Interact effectively with others. ▪ Use time and resources productively and efficiently. ▪ Understand health and safety issues within the workplace (e.g. alcohol and other drug use, stress, ergonomics, etc.)

PROBLEM SOLVING

STANDARDS	EXAMPLES
Apply decision-making and problem-solving techniques in workplace situations.	The following are intended to help clarify the standard and are not all inclusive: ▪ Make decisions and select alternatives for a given situation. ▪ Identify cause and effect relationships to solve problems. ▪ Use problem solving strategies to reach solutions to a work-related problem.

TEAMWORK

STANDARDS	EXAMPLES
Demonstrate effective teamwork.	The following are intended to help clarify the standard and are not all inclusive: ▪ Identify roles in a team and behaviors that contribute to team effectiveness. ▪ Contribute positively to the success of a team project. ▪ Interact cooperatively, courteously and professionally with others. ▪ Recognize how differences in culture affect interaction with others. ▪ Demonstrate consideration for individual differences. ▪ Demonstrate strategies for conflict management.

COMMUNICATION

STANDARDS	EXAMPLES
Apply the principles of effective communication to give and recieve information(speaking, writing,reading,listening).	The following are intended to help clarify the standard and are not all inclusive: ▪ Speak clearly, give directions and relay information (e.g., reporting emergencies, explaining products and services, telephone etiquette). ▪ Write clearly and accurately (e.g., letters, memoranda, forms, instructions, brief descriptive accounts). ▪ Read technical materials for information (e.g., guidelines, manuals, directions, procedures, interpretations). ▪ Listen actively and ask for clarification when necessary. ▪ Respond to verbal and nonverbal messages and recognize cultural differences.
Acquire, use and transfer information.	The following are intended to help clarify the standard and are not all inclusive: ▪ Locate and organize information from relevant sources (e.g., manuals, books, experts). ▪ Use computers to process and communicate information.

WORKPLACE SYSTEMS

STANDARDS	EXAMPLES
Analyze work-related systems,organizations,processes and procedures.	The following are intended to help clarify the standard and are not all inclusive: ▪ Analyze the design and management of a system and the organizational structure of the workplace. ▪ Follow organizational work processes and procedures. ▪ Describe an organization's place within its industry and the local, state and global economy. ▪ Understand and demonstrate how to work effectively within the organizational structure. ▪ Recognize the changing nature of work and workplaces (e.g., telecommuting, home-based businesses, entrepreneurial ventures).

CAREER-RELATED LEARNING STANDARDS

CAREER DEVELOPMENT

STANDARDS	EXAMPLES
Assess the relationship of educational achievement to career goals.	The following are intended to help clarify the standard and are not all inclusive: ■ Identify characteristics, education, training and work experience required in areas of interest. ■ Describe how skills developed in school relate to future education, training and employment. ■ Describe the need for lifelong learning in career development.
Research and analyze career options.	The following are intended to help clarify the standard and are not all inclusive: ■ Use a variety of resources, including electronic media to explore career information and options. ■ Assess career opportunities (e.g., employment, industry and economic trends; working conditions, benefits and opportunities for change and growth). ■ Demonstrate career planning skills (e.g., self-assessment, career exploration, decision-making). ■ Demonstrate effective job-seeking skills (e.g., preparing resumes and employment applications and interviewing).
Assess characteristics related to personal, educational and career goals.	The following are intended to help clarify the standard and are not all inclusive: ■ Evaluate interests, strengths, weaknesses, abilities and skills. ■ Identify personal educational and work goals. ■ Recognize and incorporate life roles in making career and life planning decisions. ■ Compare personal interests and skills with those necessary for entrepreneurship.

EMPLOYMENT FOUNDATIONS

STANDARDS	EXAMPLES
Demonstrate academic knowledge and technical skills required for successful employment within an endorsement area.	The following are intended to help clarify the standard and are not all inclusive: ■ Apply academic knowledge and basic technical skills related to an endorsement area. ■ Understand and adhere to industry and company security and legal policies, ethical practices, quality assurance and production standards. ■ Understand the rights and responsibilities of both employers and employees. ■ Follow workplace health and safety requirements. ■ Apply current and appropriate technology to specific tasks.

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RESOURCES

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Certificate of Advanced Mastery

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RESOURCES

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Service Learning

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PASS

For more information about the Proficiency-Based Admission Standards System, please call one of the following.

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PREP

For information on PRoficiencies for Entry into Programs, please call Elaine Yandle-Roth at (503) 378-8648 ext. 367 (or e-mail elaine.yandle.roth@state.or.us).

Oregon Educational Act for the 21st Century

For more information about the Oregon Educational Act for the 21st Century, please call Tanya Gross at (503)378-8004 ext. 287 (or e-mail tanya.gross@state.or.us).

E-Mail

You can e-mail most department staff by using this syntax:

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World Wide Web

Most Oregon Department of Education publications can be found on the department's World Wide Web home page at:

http://www.ode.state.or.us

The Oregon Public Education Network (OPEN) maintains an excellent Web site of resources for educators, including the content standards:

http://www.open.k12.or.us

WHAT IS STANDARDS-BASED INSTRUCTION?

Oregon's standards-based instruction system has been under development since 1991, when the state legislature passed Oregon's Educational Act for the 21st Century. The Act recognizes that tomorrow's students will need higher skills to find competitive employment and to function successfully in a more complex society. It requires public schools to establish higher standards and be even more accountable for helping students reach those standards.

To meet that charge, Oregon educators and administrators have been working together to build a comprehensive K-12 education system of closely linked instruction and assessment, based on clear, common statewide academic standards. These **content standards** clearly define what students should know and be able to do to be considered proficient in specific academic areas. At the **benchmark** years of grades 3, 5, 8, 10 and 12, students will take state tests to measure their achievement of the content standards. **Performance standards** define the scores students will be expected to achieve on the state tests. Student mastery of the content standards also will be assessed through classroom activities on a regular basis, using state **scoring guides**.

Students who meet or exceed the grade 10 performance standards will receive a **Certificate of Initial Mastery**. After that, students will select a broad career area of interest, called an **endorsement area**, to focus their studies in their junior and senior years of high school. Through a blend of school-, work-, and community-based learning experiences within their endorsement areas, they will achieve academic and career-related learning standards. When they achieve the grade 12 performance standards, they will be awarded a **Certificate of Advanced Mastery**.

Standards-based instruction provides consistency for what is taught, learned and assessed within the state, but it does not infringe on the autonomy of local districts to develop curricula appropriate to the needs of their communities. Locally elected school boards will determine what kinds of instruction, technologies and curricula to use to help students achieve the standards. They also may expand their curricula to areas beyond the content standards.

In the standards-based system, teachers will be even more focused on what they require of students and how their classroom curriculum, instruction and assessment will work together to help students achieve the necessary results. Expectations will be higher for everyone — students and educators. Meeting those expectations will position Oregon's public school system among the most competitive in the country.

OREGON SCHOOLS FOR THE 21ST CENTURY

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